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ABSTRACT

Part I (chapters 1-5) gives a brief description of the evolution and working of the educational system, forecasts the system as it would be in the future if no changes were introduced, and estimates the resources necessary to meet the needs of the system. Part II (chapters 6-8) examines the extent to which the various sections of the community make use of the educational facilities available, examines employment patterns, and forecasts the number of people with various levels of qualifications who are expected to be required to meet the needs of the Irish economy. Part III (chapters 9-11) analyzes the existing structure of primary and postprimary education in order to identify areas for more effective use of resources and discusses the structure of educational financing. Part IV (chapters 12-15) considers the adaptation of the system to changing needs in supply of demand for qualified persons, recommends how educational planning might be organized in the future, refers to the question of educational aid for developing countries, and considers the role of education in the theoretical context of economic progress. Chapter 16 is a concluding chapter. Numerous appendixes are attached. (Author/IRT)

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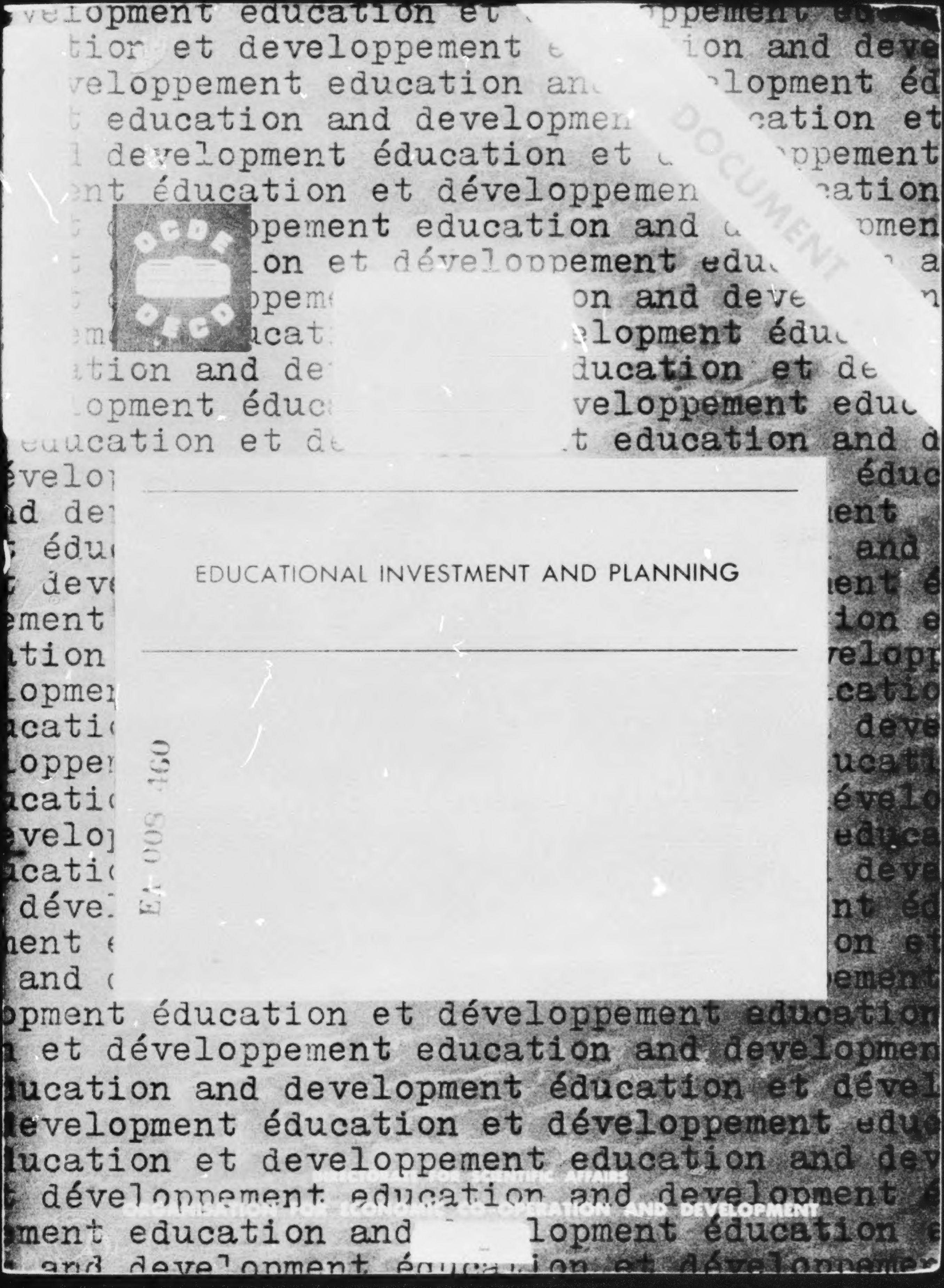

EDUCATIONAL INVESTMENT AND PLANNING

EA 008 460

DIRECTORATE FOR SCIENTIFIC AFFAIRS
ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

EDUCATIONAL INVESTMENT AND PLANNING

INVESTMENT IN EDUCATION
IRELAND

Report of the Survey Team
appointed by the Irish Minister for Education

DIRECTORATE FOR SCIENTIFIC AFFAIRS

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT

2, rue André-Pascal, Paris 16ᵉ

The Organisation for Economic Co-operation and Development was set up under a Convention signed in Paris on 14th December 1960 by the Member countries of the Organisation for European Economic Co-operation and by Canada and the United States. This Convention provides that the O.E.C.D. shall promote policies designed:

- *to achieve the highest sustainable economic growth and employment and a rising standard of living in Member countries, while maintaining financial stability, and thus to contribute to the world economy;*
- *to contribute to sound economic expansion in Member as well as non-member countries in the process of economic development;*
- *to contribute to the expansion of world trade on a multilateral non-discriminatory basis in accordance with international obligations.*

The legal personality possessed by the Organisation for European Economic Co-operation continues in the O.E.C.D. which came into being on 30th September 1961.

The members of O.E.C.D. are Austria, Belgium, Canada, Denmark, France, the Federal Republic of Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States.

The Directorate for Scientific Affairs, which is responsible for the publication of the present report, has been established within OECD to take charge of the activities of the Organisation relating to scientific research and to the expansion and rational utilization of the scientific and technical personnel available so as to meet the needs arising from economic growth.

The Educational Investment and Planning Programme, in connection with which this report was prepared, provides a framework of mutual assistance among the Member countries in their efforts to plan for educational development. Under this programme the national authorities responsible for educational planning, programming and development conduct a systematic exchange of information, guide co-operative research into key policy issues, and study the planning work undertaken in the countries in this field.

In line with this programme the Irish Minister for Education initiated the survey work for this report in October 1962, under a bilateral agreement with the OECD. Detailed statistical data are presented in a second volume published in connection with the official report of the Irish Government. The volume can be obtained from

Government Publications Sale Office,
G.P.O. Arcade, Dublin 1, Ireland.

Foreword

by the Secretary-General of the OECD

The OECD's Educational Investment and Planning Programme (EIP) effectively began in October 1962, when the Government of Ireland appointed a team to prepare this report. A major document in the general OECD programme to foster planning for educational development in the Member countries, it is one of a series being prepared by national planning authorities participating in this programme.

The original aim of the Organisation in this field, to promote the planned development of education as a contribution to sound economic growth, has been substantively advanced in this programme by the countries themselves in work such as is exemplified by this report. In the case of Ireland, the group of experts brought together by their government operated under a dual framework consisting, first of the OECD's policies and accumulating experience in this field, and second, of the particular national requirements to transform basic Irish institutions to fit Irish policies for rapid economic and social development.

While this report does not directly recommend a large expansion in the Irish educational system, it assembles and organises an impressive collection of data which points in this direction. Furthermore, this effort opens up a wide range of questions as to what the character of this development of Irish education might be. Thus, the report constitutes a major technical effort – within the resources and data available – at self-examination which is at the heart of any effective planning programme. In the course of this work, many more questions have been raised than could be answered in this initial report. These questions are fundamental both in the context of Irish developments and in the context of problems facing other Member countries. In particular, the Irish report has explored questions of the efficiency or rationalisation of the educational system and has suggested that criteria in other spheres of the social economy be applied to education. Such an application involves the whole complex of sciences relevant to the educational process and furthermore opens up a basic question in scientific research policy itself.

While this is distinctly an Irish country report, it has not been done in isolation. It does not represent merely an effort to allow one country to learn from the example of another - useful as the report may be in this respect. Rather, it is the reflection and final product of an exercise in this programme, consisting of a continuing relationship between the Irish team and the authorities and staff involved in educational planning in other Member countries within a framework provided by the OECD through meetings, studies, and consultation over a period of almost three years. The major purpose of the EIP exercise has been to help strengthen, by this organised mutual exchange, the institutional base in each participating country for educational development planning. It is therefore appropriate and gratifying that the one recommendation contained in this report, namely, that it be followed by the formation of a Development Branch for Education in the Ministry of Education, has been adopted by the Irish Government. This, of course, promises well for the complex and challenging tasks identified in this report.

Thorkil KRISTENSEN

Introduction

by

Mr. George COLLEY, T.D.,
Irish Minister for Education

I wish to thank the Secretary-General, Mr. Thorkil Khristensen, for inviting me to contribute this introduction to the Report on the Irish Pilot Survey and thus enabling me to acknowledge the value of the Educational Investment and Planning Project, both in contributing to new thinking on educational problems and in promoting co-operative effort among nations. We in Ireland are grateful for the opportunity to play an active role in this project and are happy to place the results of our research and studies at the disposal of our fellow-members of the OECD. At the same time we acknowledge how much we owe to those members who have been pioneers in the field of educational planning.

The Washington Conference on education and economic growth introduced a new dimension into educational thinking. It was not the first time education has been linked with economic development – indeed, since Alfred Marshall, economists had been addressing themselves to the theory of the relationship – but it was the first on which an international organization whose primary concern is the economic prosperity and well-being of its members, accepted a general role in the educational sphere. Thus began the Educational Investment and Planning Project.

For us in Ireland the project came at a significant point in our economic development. Our First Programme for Economic Expansion was drawing to a close and work was beginning on our Second Programme. The First Programme, for all its success, had revealed problems that showed economic planning to be a difficult and sophisticated exercise; there was a growing realization that planning must embrace the totality of national activities, including those in the social and cultural spheres. Accordingly, when it was suggested that Ireland might be the subject of a pilot educational study, we had no hesitation in accepting the opportunity and the challenge. We are naturally pleased to have been the first country to complete a study and publish a report.

I recognise and gratefully acknowledge the role of OECD in this study. Apart from the material assistance, which was substantial, there was the constant advice and encouragement of the Secretariat. In particular, I wish to acknowledge the deep interest in and enthusiasm for the study shown by Dr. Alexander King, Director, Office for Scientific Affairs and his staff.

I am grateful also to the delegates and officials of other member countries who found time to assist the Irish team with advice and information and who took such pains to examine and criticise the initial drafts of the report.

For us in Ireland this report has had an immediate impact on policy. We are now embarked on the long and arduous task of adapting our educational system and institutions to serve the needs of the nation in the age of technology and, we hope, rapid economic growth. For the OECD the report marks the successful completion of a pilot study and is another contribution to the growing body of literature on education and economic progress. It will, I hope, be found useful and informative. I should, indeed, like to feel that it will encourage countries who have not already done so to undertake similar studies and to recognise the relevance of educational planning to economic planning.

The Educational Investment and Planning Programme has far outgrown the original concept. It is now a most important exercise in practical international co-operation. May this report and others that will follow it strengthen our co-operative endeavours to promote the aims to which we have subscribed in the Convention of the OECD, the achievement of the highest sustainable economic growth and employment and a rising standard of living for all our people in all our countries.

Errata

Page 4. Table 1.1. Footnote 13
Add includes instruction to part-time students.

Page 20. Table 1.5
The second footnote asterisked thus * refers to the figure 94.6 in the second column of the table.

Page 25. Footnote 6.
For "1961" read "1963".

Page 32. Third line.
For "13-66" read "13.6".

Opposite Page 36. Table 3.2
Third line from the end of the table. The population figures are whole numbers, not in thousands.

Page 113. Chart 6.1
In the table delete the words "by examination result" and similarly in the list of charts in page XXVII.

Page 142. Table 6.21. Note 1
The last sentence should read "The figures for College of Surgeons are *roughly estimated* at 100 first degrees and 10 higher degrees".

Page 145. Table 6.24 – Page 146. Table 6.25 – Page 147. Table 6.26
In the titles to these tables, for "excluding third level" read "excluding third level outflows".

Page 172. Chart 6.7
First line "Basic Population". Under social Group D for "30" read "10".

Page 260. Paragraph 9.75. Ninth line.
For "14" read "4".

Page 276. Table 10.12
Notation. The last sentence should read "The symbol 0.0 means that less than 0.05 *per cent* took it and 0 means that nobody took it.

Page 277. Paragraph 10.21. Fourth line
For "only 218 boys" read "less than 200".

Page 279. Paragraph 10.21.
Fourteenth line. For "6 in Spanish" read "16 in Spanish".
Twentieth line. For "2" read "1".

Page 402.
Under "Related Topics". Fourth and sixth entries. For "The Engineer's Association" read "The Engineers' Association".

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TERMS OF REFERENCE

(a) Preparation of inventory of the existing position in relation to skilled manpower. This would involve prior agreement on the definitions which would be applied to the various categories of workers.

(b) Framing of educational targets, including provision for research, in relation to the assessments to be made of overall needs for skilled manpower according to field of study and level of skill, for the next 10-15 years. Alternative estimates, made according to different basic assumptions will take into account trends in economic and demographic factors, and also the experience of other countries.

(c) Assessment (on alternative bases) of future essential demand for educational facilities at different levels based on present trends and international experience and having regard to any other factors likely to influence such demand.

(d) Estimates of future enrolments at different levels of education and by subject of specialisation, according to the alternative assumptions mentioned above.

(e) Interpretations of estimated enrolment figures in terms of the expansion of educational resources, i.e., teachers, buildings, equipment, etc., taking into account possible improvements in the quality of teaching.

(f) Evaluations of the expenditure entailed by the various alternatives for the expansion of educational resources—the evaluations should be expressed in relation to macro-economic data, such as GNP and volume of investment.

(g) Consideration of arrangements necessary to ensure the review of the position at intervals in the light of changing circumstances in the field covered by the study. In this connection to recommend the nature and extent of the additional statistical data concerning current activities which should be collected and the methods and frequency of such collections.

(h) The extent to which the foregoing assessments might be influenced by the provision of educational facilities in Ireland for students from other countries and of educational aid in the form of teachers and other trained personnel for service in the emergent countries.

THE NATIONAL STEERING COMMITTEE

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SECRETARY

Cathal Uasal Mac Gabhann, Department of Education.

FUNCTIONS OF NATIONAL TEAM AND STEERING COMMITTEE

1. The national team Director is charged with the carrying out of the project in accordance with the terms of reference.

2. It shall be the function of the National Steering Committee to advise the national team and for that purpose :—

(a) to consider and approve the broad general lines of approach to the assignment ;

(b) to consult at regular intervals with the team Director.

3. It shall also be the function of individual members of the Committee to endeavour to secure in their particular fields such information and co-operation as the Director may request.

4. The draft final report of the Director shall be submitted to the Committee for observations and suggestions.

TECHNICAL NOTE

ROUNDING

In tables in the Report and Appendices, each figure has been rounded individually. In some cases, therefore, the rounded figures in a column or row do not add to the rounded total.

ACKNOWLEDGEMENT OF COPYRIGHT

We are grateful to the Economist Intelligence Unit, London, which holds the copyright for the series 'Studies on Immigration from the Commonwealth', for permission to use certain data from this work in the compilation of Table 7.4.

Introductory Note

In this Survey we have tried to keep before our minds at all times the character and purpose of education and that the term 'educational system' has little meaning if it is considered apart from the human needs which it is there to serve. Our limited task, however, was the prosaic one of examining those resources which are indispensable to any system of education. This Report, therefore, is essentially a technical study of trends in Irish education and of the use of human and material resources in that system. It estimates the demands that are likely to be made on those resources and considers the extent to which the system seems likely to meet future needs. These needs include satisfactory participation in education by all sections of the community and an adequate supply of qualified persons. Arising out of these investigations an examination is made of the effects of possible changes in the educational system and in its traditional use of resources. The Report is a long one and is essentially fact-finding and analytical in character.

The Report has been drafted with an awareness of the interrelationship between means and ends. In education, as in other areas, decisions on ends are often influenced by considerations of means. A recognition of the resources needed to meet a given set of objectives may lead to changes in objectives or to a different arrangement of priorities.

It is not our function to say what the objectives of the educational system should be or to say what priority or weight should be given to particular objectives. Our role is an ancillary one. To be most effective, decisions and policies require an adequate basis of relevant information: it is our responsibilty to supply such information and to recommend how it can continue to be made available. The implications and likely outcome of various courses of action need to be indicated both as regards the attainment of certain objectives and the scale of resources involved.

The Report consists of sixteen chapters. They deal with the subject, not in the order in which the terms of reference present it, but as indicated in what follows. The Report is in four parts. Part I consists of chapters 1 to 5. Chapter 1 gives a brief description of the evolution, present organisation and working of the educational system. A forecast is made in chapters 2 and 3 of the system as it would be in the future if no changes were introduced other than those already officially announced. In chapters 4 and 5 the resources necessary to meet the needs of that system are estimated.

Part II consists of chapters 6, 7 and 8. Chapter 6 contains an examination of the extent to which the various sections of the community make use of the educational facilities available at present at each level. In chapters 7 and 8 patterns of employment are examined and a forecast made of the number of people with various levels of qualifications, who are expected to be required to meet the needs of the Irish economy in the years ahead. These requirements are set beside the numbers of qualified people likely to become available from the present education system as described in previous chapters. Part III consists of chapters 9, 10 and 11. A detailed analysis of the existing educational structures of primary and post-primary level is made in chapters 9 and 10 in order to identify areas in which there appears to be scope for a more effective use of resources. Chapter 11 is a brief discussion of the structure of educational financing.

Part IV contains chapters 12 to 15. In chapter 12, the analysis of the system and the comparison made earlier in the Report between the supply of qualified persons on the one hand and the demand on the other leads to a consideration of possible alterations designed to facilitate the adaptation of the system to changing needs Some possibilities are discussed and their implications examined.

Chapter 13 contains recommendations on how educational planning might be organised in the future. Chapter 14 refers to the question of educational aid for developing countries.

Chapter 15 considers the role of education in the theoretical context of economic progress. Chapter 16 is a concluding chapter.

This brief account indicates the range of topics dealt with in this Report. The Report does not claim to be conclusive or exhaustive. Some aspects of our subject are not discussed. Others would have been more thoroughly and, perhaps, more fruitfully discussed but for the time limit, which is necessarily a feature, and, almost certainly a desirable discipline in a pilot survey of this kind. Time for the survey was limited. In addressing ourselves to the terms of reference we were faced with certain difficulties not inherent in such a survey and arising mainly because our task was, in a sense, a pioneering one. There was a dearth of the basic data needed for our analysis of the educational system. The collection of this information and the demographic and manpower forecasts occupied a substantial amount of time, which otherwise might have been differently employed.

We see in the Report only a beginning, a foundation on which others may build. There is no finality about it nor could there be, for change is perennial and will not stop this year or next. The process, which the Report initiates, should be regarded as a continuing one if the intention of the Report is to be realized. The two basic problems of making the most effective choices and using means to greatest advantage will always remain. With them will remain the need for adequate information if policy is to be as fully informed as possible.

We ourselves are responsible for the shortcomings of the Report. Whatever merits it has owe much to the guidance given by the Chairman and members of the Steering Committee and by OECD., to the facilities afforded us by the Department of Education and the Central Statistics Office, and, of course, to the co-operation of the various school authorities in supplying information. The Departments of Finance, Agriculture, Lands, Defence and Justice must also be thanked. We are specially indebted to Dr. M. D. McCarthy, Director of the Central Statistics Office, and to Dr. R. C. Geary, Director of the Economic Research Institute, for helpful advice and constructive criticism. It should be noted, however, that full responsibility for the report, the accuracy of the data, the views expressed and the conclusions rests exclusively with us, the members of the survey team.

We wish to record our gratitude to school managers, chief executive officers of vocational committees, principals and teachers, and to parents and pupils, who bore patiently with our enquiries and gave us valuable information.

To all, who in any way helped us in our task, with information, advice or criticism, we offer our sincere and grateful appreciation.

PART I

Part I in general is a description of the existing system of education in Ireland and presents a forecast of what the numbers participating in education and the resources involved are likely to be in the years ahead in that system, as modified only by changes already publicly announced by the Minister for Education.

Chapter 1 describes the various schools and colleges that comprise the educational system. On the basis of forecasts of population made in Chapter 2 a forecast is made in Chapter 3 of the number of pupils who are likely to be in the various divisions of the educational sector in the years ahead. In Chapter 4 an estimate is made of the numbers of teachers and buildings needed to cater for those numbers of pupils by present standards: and consideration is given to how far existing arrangements are likely to make those resources available in adequate measures. Chapter 5 discusses the costs involved in providing these resources.

CHAPTER ONE

The Irish Educational System

1.1 The task of this survey is to forecast the demands that may be made on the Irish educational system in the years ahead, to estimate the resources needed to meet those demands, and to consider how those resources may be allocated to most effect. In this chapter we shall describe what we define as the educational sector, that is the various categories of schools and colleges which we regarded as coming within our purview, giving the institutional structure and the numbers participating. In line with this we shall for convenience use the term 'education' in the restricted sense of being the service provided by those schools and colleges.

1.2 One of the difficulties that confronted us at the beginning of the survey was the inadequacy of the educational statistics available. Statistics were in general available for the number of pupils in State-aided establishments. They were of rather limited value for our purposes, however, as they had been collected primarily for administrative purposes, and also because of technical difficulties such as differences in the dates of collection. Very little information was available regarding the ages of the pupils.

1.3 A limited survey[1] of pupil numbers by age had been carried out by the Department[2] in February, 1962. We expanded this, in February, 1963 and 1964, in co-operation with the Department, to cover all establishments within the educational sector,[3] whether aided by the Department of Education or by other Departments or non-aided, as well as to include number of teachers, aggregate teaching hours and size of classes. We shall refer to these surveys as the February censuses—a detailed account of how they were organised is given in Appendix I.

---

[1] Covering pupils over ten years of age in national, secondary and vocational schools.

[2] 'Department' means the Department of Education, unless otherwise stated.

[3] In paragraph 1.39 we refer to some institutions not included in our definition of the educational sector.

TABLE 1.1

Number of Schools, Pupils, Teachers, on 1st February, 1964 (Full-time Education)

Reference in text	Type of School or College	Number of Schools or Colleges	Number of Full-time Pupils	Number of Teachers	
				Whole-time	Whole-time Equivalent of Part-time
Paragraph	First Level :				
9	National School	4,800[1]	472,124	13,875[2]	—
13	Special School	41	2,793	189[2]	—
16	Non-aided Primary.. ..	192	21,151	751	125
	Second Level :				
12	Secondary Top	81[1]	6,696[3]	231[2]	65[4]
18	Secondary School	569	87,948[5]	4,982[6]	167[6]
24	Vocational (Continuation)	245	28,969	1,826[7]	410[8]
24, 36	Vocational (Technical) ..	15[9]	1,607[10]		
32	Residential Domestic ..	12	381	30	6
34	Other Aided ..	22	1,112	70	5
23	Non-aided Secondary ..	3	250	—[11]	—
—	Non-aided Commercial ..	60	2,139	94	20
37	Non-aided Religious ..	5	134	12	4
34	Other Non-aided	2	129	7	—
	Third Level :				
35	University ..	6	13,153[12]	1,043[13]	—
	Teacher Training				
15	..National ..	6	1,108	62	11
31	..Domestic Science	2	163	14	6
31	..Vocational ..	2	66	3	6
15	..Non-aided ..	5	253	3	14
36	Other Aided ..	3	290	6	24
37	Non-aided Religious ..	38	1,786	136	34

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[1] The 4,800 include the 81 which have a secondary top.

[2] *Source* : Department. Excludes supernumeraries (436) in national schools.

[3] Junior Cycle 5,754, Senior Cycle 942.

[4] Actually 260 part-time.

[5] Junior Cycle 64,334 Senior Cycle 23,614.

[6] All diploma students have been counted as whole-time.

[7] Includes instruction to part-time students.

[8] The teaching hours for full-time students is equivalent to about 175 whole-time teachers.

[9] Five are included in the 245 above.

[10] Includes 594 third level. Also includes 143 in Army Apprentice School, Naas.

[11] Not available.

[12] Including 3,278 from outside the State. Includes St. Patrick's College, Maynooth and Royal College of Surgeons.

[13] 1962/63, Full and Part-time (Statistical Abstract 1964). Does not include staff of College of Surgeons.

TABLE 1.2

Number of Pupils in Full-Time Education by Age by Type of School, February, 1964

Type of School or College	4 and 5	6 to 12	13 years	14 years	15 years	16 years	17 years	18 years	19 years	20 years and over	TOTAL
	Number of Pupils										
First Level											
National Schools ..	63,695	371,253	30,585	5,586	763	170	64	8	—	—	472,124
Special Schools ..	255	1,745	234	238	175	84	46	16	—	—	2,793
Non-aided Primary Schools ..	4,171[1]	16,741	220	19	—	—	—	—	—	—	21,151
Total first level ..	68,121	389,739	31,039	5,843	938	254	110	24	—	—	496,068
Second Level											
Junior Cycle Secondary and Secondary Top	—	6,832	17,715	21,072	17,432	6,163	815	57	2	—	70,088
Vocational (Continuation) ..	—	135	4,714	10,266	8,285	3,960	1,216	313	67	13	28,969
Senior Cycle Secondary and Secondary Top	—	—	—	67	2,040	9,275	9,445	3,326	349	54	24,556
Vocational (Technical)	—	—	—	2	49	225	289	395	269	378	1,607[2]
Other Aided (inc. Residential Domestic) ..	—	—	—	38	198	369	285	278	154	171	1,493
Non-Aided	—	19	78	157	231	435	590	766	213	163	2,652
Total second level ..	—	6,986	22,507	31,602	28,235	20,427	12,640	5,135	1,054	779	129,365
Third Level											
Universities	—	—	—	—	—	9	558	1,848	2,268	8,470	13,153
Teacher Training (aided)	—	—	—	—	—	—	64	328	411	534	1,337
Other Aided	—	—	—	—	—	3	16	74	78	119	290
Teacher Training (non-aided)	—	—	—	—	—	—	13	46	71	123	253
Non-aided Religious	—	—	—	—	—	—	24	92	213	1,457	1,786
Total third level ..	—	—	—	—	—	12	675	2,388	3,041	10,703	16,819
Grand Total	68,121[3]	396,725	53,546	37,445	29,173	20,693	13,425	7,547	4,095	11,482	642,252
Population 1964 (Estimated)	117,500	401,400	56,600	56,400	56,600	56,200	54,200	52,200	46,500	174,200[4]	—
Percentage participation ..	58·0	98·8	94·6	66·4	51·5	36·8	24·8	14·5	8·8	6·6	—

[1] Includes 217 under 4 years of age. [2] Includes 594 third level. [3] Excluding pupils in schools catering only for pupils under six.
[4] 20 to 24 age group.

1.4 The results of the 1964 survey are given in Tables 1.1 and 1.2. Table 1.1 gives, for full-time education, the number of schools in the various categories and the number of pupils and teachers in them. Table 1.2 gives the age distribution of the pupils as well as the percentage participation in full-time education by the relevant age groups in the population. The 1963 data were the basis of much of the analysis done in the later chapters as they were the latest available at the time: they are given in Appendix I. Part-time education is discussed later in the chapter.[4]

1.5 The institutional structure of the various categories of schools shown in these tables is described in the paragraphs that follow. The terms 'level' and 'cycle' will occur frequently. The former is used in its usual sense as will be seen from the tables 'first level' referring to primary education, 'second level' to post-primary and 'third level' to university and other advanced courses. These levels may be sub-divided for some purposes and we use the term 'cycle' to describe such a sub-division.

GENERAL BACKGROUND

1.6 The structure of the system of education in Ireland owes much to history.[5] It is in general an aided system: the State does not itself operate the schools[6] but assists other bodies to do so. Most of the primary and secondary schools are under clerical management. The vocational schools are operated by local vocational education committees which are elected by the members of the local government authorities. The universities operate autonomously under charter.

1.7 The major portion of public expenditure on education in Ireland is borne by central government funds, as will be seen from the discussion in chapter 5. The administration of education, in so far as the State is concerned, is vested in the Department of Education under the Minister for Education, who is a member of the Government and responsible to Dáil Éireann. The Department has under its jurisdiction in varying degrees the primary, secondary and vocational schools and the reformatory and industrial schools. A small but important area of specialised second-level education, agricultural education, comes within the administrative sphere of the Department of Agriculture.

1.8 Education is compulsory in Ireland for all children between the ages of 6 and 14 years. A child is required to remain in full-time education until the end of the quarter in which he attains the age of

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[4] Paragraph 1.43 *et seq*

[5] For an account of the historical development, see reports of the Council of Education. (S.O.)

[6] There are a few minor exceptions.

14 years. Education became compulsory when, under the Irish Education Act of 1892, attendance at school on at least 75 days in each half year was made compulsory for children between 6 and 14 years of age in all cities and towns. In rural areas the local authorities could apply the Act if they so desired. In 1926, however, four years after Independence, the School Attendance Act was passed making attendance compulsory on all school days for children between the ages of 6 and 14 years in all parts of the country. This Act also included machinery for extending compulsory education to the age of 16 years.

NATIONAL SCHOOLS

1.9 Constitutionally, parents are free to provide this compulsory education in their own homes or in private schools or in schools recognised or established by the State.[7] The majority of the children, however, attend the national schools, which are state-aided and provide free primary education.[8] The management of the national schools is on a denominational basis, the parish priest being the manager in the case of Catholic schools and the local Protestant clergyman or minister in other cases.[9] However, no child may be compelled to attend religious instruction against the wishes of his parents, nor may he be refused admission to any national school on grounds of religion or social position. The appointment of the manager normally rests with the bishop or diocesan trustees. The managers are charged with the direct government of the school. The manager appoints the teachers, subject to Departmental approval of the teachers' qualifications, but the salaries are paid direct to the teachers by the Department. The manager is also responsible for the heating, cleaning and maintenance of the school : the State pays certain grants for those purposes. On the capital side a state grant of at least two-thirds[10] of the total cost is made towards the erection of new schools or the enlargement or improvement of existing schools, the balance of the cost being raised locally by the manager.

1.10 The period of attendance at a national school is five to six hours a day on five days a week for 190 days a year. Instruction is given[11] in Religion and in Irish, English, arithmetic, history, geography, music, and needlework (for girls). The following subjects are optional : rural science or nature study, drawing, physical training, cookery or laundry work or domestic economy (for girls), and manual instruction (for boys). Algebra and geometry are taught in some schools but are not obligatory in the smaller schools or in classes taught by women. The courses of instruction in the various subjects have been prescribed by the Minister for Education after consultation with representatives of educational bodies and other educationists. On completion of the sixth standard pupils are required to enter for the primary certificate examination, conducted by the Department, in Irish, English and Arithmetic, but this certificate is not essential for entry to post-primary education. (See later paragraphs).

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[7] Article 42 (2), Constitution of Ireland, 1937.

[8] Books, etc. are not provided free generally.

[9] There is one school under Jewish management.

[10] The average state contribution in 1963 was 86 per cent.

[11] For further discussion see Chapter 9, paragraph 9.47 *et seq.*

1.11 While the national schools cater mainly for pupils within the compulsory school ages, enrolment is allowed from the age of 4 and pupils may remain in attendance up to the age of 18. Tables 1.1 and 1.2 show that there are about 4,800 national schools catering for some 472,000 pupils[12] with ages ranging from 4 to 18. There are about 14,000 teachers: two-thirds of the schools are one or two teacher schools. These numbers do not include pupils in 'special schools' or 'secondary tops', terms which we now explain.

SECONDARY TOPS

1.12 Subject to certain conditions, a national school may be formally recognised for the purpose of giving instruction in the secondary school programme to pupils who have completed the primary programme, those pupils then being admitted to the Department's examination for secondary school certificates on the same conditions as pupils from secondary schools. We refer to the secondary part of such a national school as a 'secondary top'. Table 1.1 shows that there were 81 secondary tops in 1963/64 catering for about 6,700 pupils.[13] All but about 500 of these were girls as most secondary tops are in convent national schools. Fees are charged in some of the secondary tops, but they are usually fairly low, ranging from £1 to £12 per annum. Other national schools may provide instruction in parts of the secondary programme, but only those which are formally recognised as having a secondary top may enter pupils for the secondary (intermediate certificate) examinations,[14] and only those are included under 'second level' in these tables.

SPECIAL SCHOOLS

1.13 There are a number of special schools recognised by the Department of Education for mentally and physically handicapped children. These schools operate within the general regulations for national schools, modified to meet their particular requirements in relation to pupil/teacher ratios, qualifications of teachers and curricula. Table 1.1 shows that in February, 1964 there were 41 such schools catering for about 2,800 pupils. As generally used in this report, the term 'national school' will not include these 'special schools'.

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[12] The size of an age cohort in Ireland is about 50-60,000.

[13] For a detailed account of secondary tops see Annexe D.

[14] cf. Par. 1.21.

REFORMATORY AND INDUSTRIAL SCHOOLS

1.14 Reformatory and industrial schools come within the purview of this report only in so far as they are centres for the provision of education. They come under the administration of the Department of Education. Reformatory schools are, in effect, centres for the detention of young offenders between the ages of 12 and 16 years. At present there are three such schools, one for boys and two for girls. There were 154 children in detention on 30 June, 1963 (127 boys and 27 girls). Industrial schools on the other hand receive children for a variety of reasons, primarily because of the failure of parents to care for them but also for such reasons as persistent non-attendance at school. Committal is normally to the age of 16 years but the Minister for Education may order the release of children in certain circumstances. At present there are 48 recognised industrial schools (13 for boys, 35 for girls) housing 3,240 children in 1962/63, (1,588 boys and 1,652 girls). For some years the number of children in industrial schools has been declining steadily. All children in reformatory and industrial schools receive primary education either at recognised national schools within the institution or at local national schools—in either case included under 'national schools' in Tables 1.1 and 1.2. A few of them receive post-primary education in secondary or vocational schools.

TEACHER TRAINING COLLEGES

1.15 National school teachers are trained in recognised training colleges, which are state-aided and under ecclesiastical management. Table 1.1 shows that there are six such colleges with about 1,100 students. The course of training is of two years duration. The conditions of admission and the curriculum are prescribed by the Minister for Education. The standard of entrance is that of the secondary school leaving certificate, and recruitment is mainly by open competitive examination. Entry is normally from second level education but a small number of university graduates are admitted; they take a one year course. A small number of teachers are trained according to Froebel and Montessori methods in colleges which receive no state aid. These are included under 'non-aided teacher training' in Table 1.1, as are teachers of Physical Education. These latter are recognised to teach in vocational schools and some of them are recognised to teach in secondary schools. The Froebel teachers are recognised to teach in national schools. Table 1.1 shows that there were about 14,000 teachers in national schools. Of these some 12,000 were trained teachers (4,000 men and 8,000 women): there were about 2,000 untrained women teachers. Religious comprised one in four of the women and one in seven of the men.[15]

NON-AIDED PRIMARY

1.16 Apart from the national schools, primary education is also provided by non-aided schools. These charge fees and do not receive any financial aid from the State. Table 1.1 shows that there were 192 such schools catering for approximately 21,000 children in 1963/64. These schools are located mostly in the larger centres of population, the great majority being in Dublin. Many of them are attached to secondary schools as preparatory departments. It will be seen from Table 1.2 that there are very few pupils over 12 years of age in these schools. Some 80 per cent of the pupils are 6 to 12 years of age and account for 4.2 per cent of the total numbers in that age range. The majority are understood to move into secondary schools in their thirteenth year.

1.17 There are also some kindergarten and nursery schools catering only for children under the age of six. We have not included these in our account of the educational sector, mainly because of the difficulty of obtaining adequate data about them.

SECONDARY SCHOOLS

1.18 Second level or post-primary schools are of two main types, secondary and vocational. Table 1.1 shows that in February, 1964 there were 569 secondary schools catering for some 88,000 pupils. These are private, fee-charging institutions, owned and maintained by the Dioceses, Religious Orders, Boards of Governors and others. They receive State grants and are subject to inspection. A number of them were established before any public grants were available to them : indeed sometimes in the face of imposed disabilities. State aid was not made available generally in secondary education until 1878 when the Commissioners of Intermediate Education were set up. Their role was limited to the provision of financial assistance to the schools, which took the form of payments on the results of annual written examinations. A number of revisions or modifications were made over the years including the introduction of inspection, the establishment of a register of intermediate teachers and the institution of a teachers' salary grant. A major reform was introduced in 1924, shortly after Independence, when the Intermediate Education (Amendment) Act, 1924, repealed the clauses in the previous acts which made grants to schools dependent on the results obtained by their pupils in the public examinations. The scheme of capitation and other grants and of teachers' salaries, together with the general lines of the programme and examination system, all derive from this Act.

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[15] *Source:* Department.

1.19 At present secondary schools receive financial assistance from the State under two main headings:

(a) a capitation grant paid in respect of each recognised pupil;[16]

(b) the major portion of the salaries of the registered teachers[17] employed in the schools, within a quota limit. The schools are required to pay a certain additional amount in salary to lay teachers.

Special grants are also payable in respect of the teaching of science subjects, domestic science, manual instruction, and music. In recent years extra grants have been introduced for the furnishing and equipment of science laboratories, the renting or purchase of television sets and the equipping of language laboratories. In 1964 a scheme of grants towards the capital cost of building and extending secondary schools was introduced.

1.20 The typical age at entry[18] to secondary schools is about 13, but it ranges from 11 to 15. The full period of instruction is 5 to 6 years and the completion ages range from 16 to 19. Entrants come from the national schools and from the non-aided primary schools; the regulations of the Department require that to be eligible for the payment of capitation grants a pupil must have obtained a primary certificate (paragraph 1.10) or have satisfied the entrance requirements of the school. However, less than 1 per cent of all new pupils are refused a grant on these grounds. A minimum number (five or six) of approved subjects must also be studied and schools must operate on 200 days a year to qualify for full grant. The rates of full grant at present[19] are £14 for junior pupils (up to intermediate certificate) and £19 for senior pupils.

1.21 In curriculum the secondary schools correspond in a general way to grammar schools or gymnasia in other countries. The curriculum must include Irish, English, history and geography, mathematics, another language or science or commerce, domestic science (for girls). Further detail, including a list of optional subjects, is to be found in Chapter 10. Almost all of the schools prepare their pupils for the Department's examinations: as a result there is a high degree of uniformity in syllabus. These examinations are the intermediate certificate taken at the age of about 15 to 16 years after a three to four year course of study, and the leaving certificate taken at the age of 17-18 years after a further two years. Passes in leaving certificate subjects are in general accepted for matriculation by the university authorities. The leaving certificate examination is not confined to school pupils but is open to all on payment of a fee.

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[16] *See* par. 1.20.

[17] *See* par. 1.22.

[18] Annual Reports.

[19] 1963/64.

1.22 The appointment of teachers in secondary schools rests with the school authorities. The Department's regulations require that schools in receipt of state grants employ a certain minimum number of registered secondary teachers related to the number of pupils and pay each of these teachers, if a lay teacher, a fixed minimum basic salary. At present this minimum is £200 per annum, but in practice schools pay more than this. A register of secondary teachers is administered by the Department of Education under regulations made by a representative Registration Council with the approval of the Minister for Education. The qualifications required of applicants for registration include a degree of a recognised university, a recognised postgraduate qualification of training in the theory and practice of education, one year's satisfactory teaching experience in a recognised secondary school and oral competence in the Irish language. The rules do not restrict these teachers to the teaching of any particular subjects; they may, in fact, teach subjects that they have not taken in their degree. In the case of non-university subjects, e.g. art, domestic science, physical training, however, a diploma from a recognised college is accepted for registration for the teaching of the particular subject.[24] Of the 5,000 full-time teachers in secondary schools shown in Table 1.1 about 4,000 were registered. These were equally divided among the four categories male/female by lay/religious.

NON-AIDED SECONDARY

1.23 There are a few non-aided secondary schools These of course enjoy complete independence as regards curriculum, etc. We have accounted for three such schools catering for about 250 pupils (Table 1.1). No state grants are paid to those schools nor to the teachers in them.

VOCATIONAL SCHOOLS

1.24 The second major type of post-primary school is the vocational school. Historically, this has evolved from the technical schools. The impetus in the development of technical education in Ireland dates from the establishment of the Department of Agriculure and Technical Instruction for Ireland in 1899. At that time also the present method of public control which is peculiar to technical education was introduced, responsibility being given to educational committees selected by the new local authorities—the Local Government (Ireland) Act had been enacted in 1898. A period of considerable development followed, particularly in urban technical and commercial education and in evening classes.

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[24] As is a university diploma in the teaching of music.

1.25 After 1922 the administration of technical education was transferred to the Department of Education and there followed a radical revision of the system. Following the recommendations of the Commission on Technical Education the Vocational Education Act, 1930 was enacted. From this act derives the subsequent development of vocational and technical education. Its most notable feature was the provision for a system of full-time day ' continuation ' education, a term which is explained below (Paragraph 1.28).

1.26 There are thirty eight vocational education committees: one each for the cities of Dublin, Cork, Limerick, Waterford, and for seven urban areas (Bray, Drogheda, Dún Laoghaire, Galway, Sligo, Tralee, Wexford), and one for each administrative county.[21] Each committee has a minimum of fourteen members selected by the local rating authority[22] and holds office for the same period as the authority. Not more than eight of the members may be members of the rating authority. Membership must be representative of educational, cultural, industrial and commercial interests in the area. Each committee has a chief executive officer who acts as director of education and secretary/accountant.

1.27 The functions of a committee are to provide, or assist in the provision of, a system of continuation education and a system of technical education in its area. In the discharge of these functions it may establish schools, employ staff, award scholarships, contribute towards expenses incurred by persons in obtaining technical education, charge fees, or remit them, and generally perform all the functions of an educational authority, within the general powers conferred by the Act. A committee's programme and expenditure is subject to the approval of the Minister for Education but, generally, once the basic educational and financial schemes have been approved a considerable degree of flexibility and discretion is allowed in regard to the actual organisation of courses. Committees can initiate action on matters relating to continuation and technical education in their areas and are thus in a position to be responsive to local needs.

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[21] County Tipperary is divided into North and South Ridings.

[22] Local taxation in Ireland is called a 'rate' and is levied on all hereditaments and land. For this purpose a 'valuation' is assigned to all real estate by a central Government body known as the Valuation Office. The 'rate 'takes the form of a proportion of the 'valuation' and is expressed as 'x' shillings in the pound. A similar system operates in Great Britain.

1.28 'Continuation' education is defined as 'education to continue and supplement education provided in elementary schools and includes general and practical training in preparation for employment.'[23] The system of continuation schools has been built up since 1930 and now caters for some 29,000 students in 245 schools (Table 1.1). The pattern of courses is rather uniform throughout the country, the guide lines having been set by the Department about 1941. The age of admission is fourteen years, but children over thirteen who have completed a year in the sixth standard of a national school are admitted. The normal duration of the course is two years, though secretarial courses for girls may extend over three. The normal timetable provides for twenty-five to twenty-eight hours instruction weekly, about one third of the time being devoted to woodwork and metalwork in the case of boys and to domestic economy in the case of girls. Boys are also taught mechanical drawing and mathematics; the girls take commercial subjects. Most rural schools teach rural science and are provided with school gardens. Art and applied science are taught in some centres. All students learn Irish and English; history as a formal subject is not taught, nor is Latin. In recent years a number of committees have introduced a modern continental language into the day continuation course. The actual programmes vary somewhat between borough, urban and county areas. While the course is nominally of two years duration, there has been a tendency for some years past for a number of students to take a third year.

1.29 'Technical education' is defined as 'education in or pertaining to trades, manufactures, commerce and other industrial pursuits'[24] and includes education in science, art and domestic subjects. Under this heading fall courses for apprentices, whole-time day courses in science, engineering, architecture, surveying, dietetics etc. which lead to professional qualifications, whole-time and part-time technical training, including the still rather ill-defined area known as technician training, special training courses in connection with new industrial development, winter farm schools[25] and evening courses whether of a professional, technical, general or leisure type.

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[23] Vocational Education Act, 1930, Section 3.

[24] Vocational Education Act, 1930 Section 4(1).

[25] Winter Farm Schools are conducted in conjunction with the County Committees of Agriculture, under arrangements made jointly by the Departments of Education and Agriculture.

1.30 Outside the four county boroughs of Dublin, Cork, Limerick and Waterford, facilities for technical education are limited. There are some part-time technical courses, training centres for hotel workers, some day release and block release for apprentices, winter farm schools and special *ad hoc* training courses in connection with new industries. Evening courses are generally in commercial, technical and domestic subjects and manual training. The county boroughs provide a rather more complete range of courses. At present, however, only Dublin and to a lesser extent, Cork, can be said to provide a full range of courses, from apprentice training to the highest technological training. In Dublin these courses are provided in four colleges, two Colleges of Technology, the College of Commerce and the College of Catering and Domestic Science: some of the work in these colleges is third level. These facilities for technical education in Dublin are national rather than local and this has been recognised from the beginning.

1.31 The qualifications of teachers are prescribed by the Minister. Teachers of woodwork, metalwork and domestic science are trained by the Department; a university degree or professional qualification is required for most other subjects. The Department has also on occasion trained teachers of Irish and rural science. Table 1.1 shows about 1,800 full-time teachers in vocational schools. These are all lay people, male teachers accounting for just under three quarters of them.

1.32 Apart from the students following continuation courses, there were also, in the school-year 1963/64 about 1,600 full-time students for technical courses (Table 1.1). There were also 6,147 students for part-time apprentice courses, 7,786 students attending various part-time day courses and 53,662 pursuing evening courses of all types.[26] In addition approximately 6,000 attended part-time winter agricultural classes organised by the County Committees of Agriculture.[27] There were also 12 residential schools of domestic economy, privately run but in receipt of capitation grants from the Department of Education.

1.33 The basic sources of funds for vocational education are the local rates, state grants and tuition fees. The maximum rate that can be levied for vocational education is 24d. in the £ and the maximum increase that can be sought in any one year is 3d. The state grants are paid *pro rata* to the contribution from the local rates, the actual ratio depending generally on whether the scheme is a county, urban or county borough scheme. Some special grants are also paid in respect of vocational education in Gaeltacht areas. In addition, in recent years special additional grants are paid to committees where necessary. Between them state grant and local rates account for over 90 per cent of income. The scale of fees is moderate and committees may remit fees in necessitous cases.

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[26] *Source:* Department of Education.
[27] *Source:* Department of Agriculture.

AGRICULTURAL SCHOOLS

1.34 In addition to grammar and vocational post-primary education, there are also some more specialised forms of second level education. The most important of these is agricultural education. The figures in Table 1.1 under 'second level, other aided' include three state-run agricultural schools catering for approximately 100 pupils, and 13 privately run state-aided schools with approximately 700 pupils. There is another state school but it is not now used for regular full-time courses. The aided schools include schools which provide a course in general agriculture for boys (one also admits girls) and schools of rural domestic economy, which provide a general training in domestic economy and ancillary activities for girls who propose to remain in agriculture. There is also an Institute, the Munster Institute, directly conducted by the Department of Agriculture, for the training of girls as poultry instructresses. The entry 'other aided' under 'second level' in Table 1.1 includes also the Forestry schools run by the Department of Lands, the Air corps apprentice training school and the army school of music, run by the Department of Defence, and the numbers receiving instruction in general subjects in St. Patrick's Institution run by the Department of Justice. 'Other non-aided' consists of two private schools recognised by the Department of Posts and Telegraphs for the training of marine radio officers.

UNIVERSITIES

1.35 The bulk of third level, or higher education, is provided by the universities. There are two universities in Ireland, the National University which has constituent colleges in Dublin, Cork and Galway and a recognised college at Maynooth (for clerical students), and the University of Dublin (Trinity College). Both universities are autonomous, but they receive state aid, which is paid through the Department of Education. The returns to our survey of February, 1964, showed 9,006 full-time[24] students in the constituent colleges of the national university (5,530 in Dublin, 1,956 in Cork, 1,520 in

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[24] 'Full-time' as used in this Report, means students taking degree courses by attendance at the full day series of lectures etc., in the appropriate faculties. Diploma students were regarded as full-time or part-time by reference to the requirements of their course. Students for the Higher Diploma in Education were regarded as part-time.

Galway). 510 in Maynooth, 2,851 in Trinity College, and 786 in the Royal College of Physicians and Surgeons in Ireland, which is also included under 'university' in Table 1.1.

OTHER THIRD LEVEL

1.36 There are also more specialised institutions providing higher education. Training in art and design is provided by the state controlled National College of Art in Dublin. (The courses provided by vocational education authority schools of art in Cork, Limerick and Waterford are mainly part-time.) Higher education in engineering, architecture and commerce is also provided in Dublin, and engineering in Cork, by vocational authorities. Although this is third level it has for convenience been included in vocational (technical) in second level in Table 1.1. Teacher training for national school teachers has already been mentioned. 'Other Aided' in Table 1.1 comprises the Military College and the College of Pharmacy as well as the National College of Art.

NON-AIDED RELIGIOUS SCHOOLS

1.37 Private schools conducted by religious may require some explanation. A very small number of these schools provide second level education, without state aid, for aspirants to the religious life. For the most part, however, private religious schools operate at third level. As used by us, the term covers major seminaries and schools of Theology and Philosophy instructing candidates for the Church. Only those students have been counted who are not in full-time attendance at a university college as defined in paragraph 1.35. St. Patrick's College, Maynooth occupies a dual position. It is a Pontifical University, conferring degrees in Theology and Canon Law, and also a recognised College of the National University of Ireland providing degree courses in Arts and Science. All of the students in Maynooth have been included under 'university' in Table 1.1, although State aid is related only to those studying secular subjects.

1.38 With higher education, the main item of state spending is the grant to the universities. This is not 'tied' to numbers of pupils, teachers or courses as with the other levels, but instead is decided upon as a result of submissions from the university authorities as to their general financial needs for the year. Other state spending on higher education relates to such items as teacher training and the National College of Art.

INSTITUTIONS NOT COVERED

1.39 It will be observed that the educational sector as thus delimited by us excludes some institutions which might well be listed under a different definition, but this is inevitable when boundaries have to be drawn. The most important exclusions are the research institutes, including the Dublin Institute for Advanced Studies, and the short courses conducted by such bodies as the Irish Management Institute and the Institute of Public Administration. Nor have we taken cognisance of Irish students who go abroad for education as we had no data on them. We also did not attempt to distinguish 'training' as opposed to 'education', including all the activities of the establishments included by us, even though some of their activities might be described as 'training' courses. An obvious example occurs in the case of the vocational schools, many of whose courses are termed 'training' courses, e.g., apprenticeship training courses. However, we excluded from consideration shop floor training and educational activity in industrial firms, again owing to lack of data.

1.40 Since the boundaries of the educational sector have been drawn in a conventional way, some anomalies may arise. When, for example, a graduate of a university goes on to do some post-graduate research, he will still be in the educational sector if the work is done in a university, but outside it if he works in, say, the Agricultural Institute or the Economic Research Institute. This may seem to be rather pedantic but we have found it necessary for purposes of clarity and feasibility. Under existing conditions, however, the effect of such apparent anomalies in the definitions is unlikely to be serious; it could be serious only if there had been significant changes in the institutional framework, as a result of which comparable types of students might have been included at one period of time and excluded at another. There do not appear to have been any institutional changes of this kind in Ireland in recent decades.

PARTICIPATION RATES

1.41 Table 1.2 shows also the percentage participation in full-time education of different age groups in the population. It should be noted that these figures cover the whole of the educational sector. This as far as we are aware, is the first time such a wide coverage has been obtained—thanks to the co-operation of the various school authorities in making such a satisfactory response to the February censuses. In Tables 1.3 and 1.4 we have summarised the figures separately for aided and non-aided establishments.

TABLE 1·3

Number of Pupils in Full-Time Education, February, 1964, by Age, Showing Separately, Pupils in Aided and Non-Aided Establishments.

Age last Birthday	4 and 5	6 to 12	13	14	15	16	17	18	19	20 and over	Total
In Aided	63,950	379,965	53,248	37,269	28,942	20,258	12,798	6,643	3,598	9,739	616,410
In Non-aided ..	4,171[1]	16,760	298	176	231	435	627	904	497	1,743	25,842[1]
TOTAL ..	68,121[2]	396,725	53,546	37,445	29,173	20,693	13,425	7,547	4,095	11,482	642,252[2]

[1] Includes 217 under 4 years of age.
[2] Excluding pupils in schools catering only for pupils under six.

TABLE 1.4

Percentage of Population in each Age Group attending Aided and Non-Aided Educational Establishments, 1964

Age last Birthday	4 and 5	6 to 12	13	14	15	16	17	18	19	20 and over
Percentage in Aided	54·4	94·7	94·1	66·1	51·1	36·0	23·6	12·8	7·7	5·6[1]
Percentage in Non-Aided ..	3·6	4·2	0·5	0·3	0·4	0·8	1·2	1·7	1·1	1·0[1]

[1] Percentage of 20–24 age group.

1.42 Table 1.5 shows on a comparative basis the percentage participation rates for Ireland, England and Wales, Scotland, Northern Ireland, France and Norway. The comparison is limited to participation by age group. Apart from the usual problems of definitions and terminology, there are difficulties in comparing participation at the various ages as a result of such factors as variations in the age of transfer from primary to post-primary schools, the legal school-leaving age, etc. The figures shown for the other countries, apart from France, reflect the fact that the school-leaving age is a year later than here (15 as against 14). Hence the participation rate for those aged 14 is significantly higher in those countries than in Ireland or France. For the ages 15 and 16, however, the Irish rate is higher than those obtaining in the United Kingdom. The Norwegian rates are the highest of all. One must advert of course to the many pitfalls in making such comparisons, and to the necessity for allowing for differences in institutional and other arrangements. In Norway, specialised full-time technical education prior to entering into employment is common and is provided for, for instance, in apprenticeship arrangements: this would tend to give a higher participation rate for the 16 year age group.

TABLE 1.5

Percentage Participation in Full-time Education—Comparative Statistics*

Country	Age 13	14	15	16
	Percentages			
England and Wales[1] ..	100·0	100·0	42·2	22·4
France[2]	98·6	71·3	56·6	47·6
IRELAND	94·6*	66·4	51·5	36·8
Northern Ireland[3] ..	94·8	92·4	39·3	22·7
Norway[4]	100·0	97·0	70·0	55·0
Scotland[5]	99·8	99·3	35·3	20·4

*Excluding third level.

Sources:

[1] Statistics of Education Part 2, 1962 (H.M.S.O., London).

[2] Information Statistique du Ministère de l'Education Nationale, Juin-Juillet, 1964 (Paris).

[3] Education in Northern Ireland, 1963–64—The report of the Ministry of Education for Northern Ireland (H.M.S.O., Belfast).

[4] Ministry of Education, Oslo.

[5] Education in Scotland in 1963—Report of the Secretary of State for Scotland (H.M.S.O., Edinburgh).

Notes

(1) Statistics for England and Wales are for 1961/62, for Norway, Ireland and Northern Ireland 1963–64 and for France, and Scotland 1962–63.

(2) The school-leaving age in Ireland and France is 14 years, in England and Wales, Scotland and Northern Ireland 15 years. In Norway a nine-year school course (7 to 16 years) is in the process of being introduced.

*There is a number of possible explanations of this low participation rate. We were unable, however, to isolate any simple decisive explanation.

PART-TIME EDUCATION

1.43 So far we have dealt only with full-time education; there is also the important field of part-time courses. It is here that our conventional delimitation of the educational sector is likely to cause anomalies. Part-time education takes many forms and is provided by several organisations and establishments. We, however, limited ourselves to the courses provided by the establishments already listed by us; even then we found it difficult to collect adequate data.

1.44 Table 1.6 shows the number of part-time students by age and major categories in the schoolyear 1962/63. Part-time courses are provided mainly by the vocational schools. Day and evening classes are available. The day courses include technological and professional courses on day release and 'sandwich' bases;[29] apprentice classes, day release or ' block ' release;[29] other courses, some mainly continuation in character and others not orientated to any specific occupation. The total number of individuals attending part-time day classes on 1 February, 1963, was 6,496; only 760 were in technological or professional courses. The largest group were apprentices, 2,645. During the whole session, the schools catered for 4,542 apprentices, including those on block release who come in mainly at the end of the session when the schools are free of normal classes.

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[29] In "sandwich" courses students spend alternate periods in college and in employment. Such courses may be college or industry-based.

TABLE 1.6

Number of Students in Part-time[1] Education by Age and Level, February, 1963

Age last birthday	Under 15 years	15 years	16 years	17 years	18 years	19 years	20 and over	Total
SECOND LEVEL								
Technical, day[2]	27	51	143	164	118	62	195	760
Apprentice, day[3]	52	179	427	595	518	370	504	2,645
Other vocational, day	975	1,074	120	42	44	34	802	3,091
All vocational, evening	..	..	..	..	..	..	..	59,863[4]
Non-aided commercial	..	..	..	..	..	..	..	..
Other Second Level	..	..	..	..	..	..	..	375
THIRD LEVEL								
University					28	58	955	1,041
National College of Art	..	..	..	..	..	..	..	508[4]

[1] Students attending short sessional courses on a full-time basis are included in this table as part-time students.

[2] Includes some third level.

[3] Does not include end of session block release.

[4] Total enrolment for the session 1962–63. Taken from the Annual Report for the year.

Source: Census taken by the team and the Department of Education in February, 1963. The symbol . . in this Table means that data were not available.

1.45 Technical courses for apprentices have developed slowly in Ireland. Until the advent of An Cheárd-Chomhairle (The National Apprenticeship Board) in 1960, development had tended to be on an establishment rather than on a trade basis. Thus most of the public enterprises had well organised schemes covering all their apprentices in a variety of skilled trades. A notable exception was the trade of motor-vehicle mechanic which was organised on a national basis. An Cheárd-Chomhairle is now regulating the various trades on a national or regional basis. For trades in respect of which it makes regulations, employers must release apprentices for attendance at appropriate classes during normal working hours without loss of earnings.

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[29] Apprentices attend a full-time course for part of the year, usually about six weeks.

1.46 It proved difficult to obtain information on the extent to which apprentices in the several trades have access to technical classes. Some figures for the major trades, based on estimates made in part by An Cheárd-Chomhairle, are given in Table 1.7.

TABLE 1.7

Estimated Numbers of Apprentices Attending Day and/or Evening Classes in Vocational Schools, by Trade, 1962/3

Trade	Total Number of Apprentices	Estimated Numbers in attendance at classes	Percentage of total in attendance at classes
Carpenters and Joiners ..	1,370	850	62·0
Cabinetmakers	285[1]	85	29·8
Communications, radio etc. ..	201	114	56·7
Electricians and allied ..	1,236[1]	665	53·8
Fitters and Turners	1,228[1]	1,150	93·6
Other metal and engineering ..	968[1]	546	56·4
Motor-vehicle mechanics ..	2,159[1]	1,400	64·8
Bricklayers	71	42	59·2
Painters and Decorators ..	490	150	30·6
Plasterers	122	60	49·2
Other building and construction	436	190	43·6
Printers	641[1]	225	35·1
Bakers	284	37	13·0
Miscellaneous trades	999	260	26·0
TOTALS ..	10,490	5,774	55·0

Sources: Figures marked[1] estimates prepared by An Cheard-Comhairle in 1962. Other figures for numbers of apprentices are taken from the Census of Population, 1961.

Numbers attending classes are based partly on data supplied to the team by vocational education committees and partly on the annual statistics supplied to the Department of Education.

Note: The total number of apprentices and learners according to the Census of Population, 1961 was 15,232. The table above is limited to apprentices in the traditional skilled and craft trades.

1.47 Evening classes have been numerically the major component of part-time education. Over the past decade the number of individuals enrolling in such classes has fluctuated between 50,000 and 60,000 annually. Lack of time precluded us from undertaking any major enquiries in this area. We do not know, for instance, how many attend different types of course; there is, obviously, a fruitful field for future investigation here. A perusal of school time-tables, however, gave some indication of the courses provided. Technological and professional courses are virtually limited to the largest centres of population. These courses cater for, among others, certain professions, mainly connected with business and management, e.g. accountancy, for which whole-time day or day 'sandwich' courses are not provided.

Indeed, these courses include the only degree-level evening courses in science and engineering provided in Ireland.

1.48 Outside the major centres the great bulk of evening courses comprise classes in commercial and secretarial subjects, classes in domestic subjects and various leisure time classes for adults. Reference has already been made to classes in agriculture, provided by the County Committees of Agriculture.

1.49 A significant amount of part-time education is also provided by the universities, particularly the National University of Ireland. In this case 'part-time' is almost synonymous with evening courses although there are some part-time day diploma students. The vast majority of part-time students are enrolled in the faculties of arts and commerce, the only faculties in which evening lectures are provided. In University College, Dublin, a full honours course is given in the evening for a degree of Bachelor of Commerce: although the course is identical with the day course, the students are described as part-time. In February, 1963, there were a total of 1,041 part-time undergraduate students in the National University.

1.50 Part-time education, particularly for adults, is provided also by the colleges of the National University through their extra-mural departments and by several voluntary organisations. Again for lack of time, we did not attempt to collect any data on these activities. Part-time education is provided to a small extent in some of the other second level divisions, notably the non-aided commercial schools.

CHAPTER TWO

Forecasts of Population

INTRODUCTION

2.1 After the survey of the number of pupils in the educational sector at present, our next task was to estimate, in the context of present policies, the numbers who would be in the various divisions of the sector in the years ahead. To do this we had first to forecast the population. Studies of population developments have a variety of uses and are essential for many forms of forward programming. Educational projections are, of course, specifically influenced by population factors in two major ways. Firstly, the size and composition of the population in the younger age groups is an essential guide to the pattern of enrolments, incidentally setting an upper bound to them. Secondly, the size and composition of the population of working-age affects the pattern of movements in the labour force, which reacts on the educational sector through changes in the employment opportunities available to school-leavers.

2.2 Demographic forecasting is at best hazardous. The four factors which immediately determine the net change in population, births, deaths, immigration and emigration, are themselves subject to a variety of influences. Nor are they independent of each other in the medium or long term—the number of births, for instance, depends on the number of women in the relevant age groups, and this in turn depends on the levels of emigration and immigration.

2.3 The importance of demographic forecasting and the inevitable uncertainties attaching to our forecasts, emphasise the desirability of a census of population in 1966 so that our projections may be checked and adjusted where necessary. We undertook this task solely out of necessity and with an awareness of our limitations in this field. It seems to us very desirable, however, that demographic forecasting should henceforward be done regularly in Ireland by an institution which would bring to the problems involved a high degree of specialist knowledge.

BACKGROUND DATA

2.4 The particular features of the Irish demographic position have been a low marriage rate,[1] a rather late age at marriage,[2] and a high proportion who never marry,[3] counterbalanced by a high fertility rate.[4] There has always been a substantial excess of births[5] over deaths,[6] but this natural increase has been more than offset by emigration.[7] The population of the State has declined more or less continuously for over a century, from about 5 million in 1851 to 3 million in 1926 and 2.8 million in 1961. The projections in this report envisage a reversal of that trend (see Table 2.2).

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[1] 5·5 per 1,000. [2] Women 26·5 years, men 30·1 years (average age).

DEATH RATES

2.5 While the crude death rate in Ireland has been fairly steady for some time, mortality as shown by the Table of Life Expectancy has declined fairly steadily for ages up to 70 to 75 years. A continuance of this slight downward trend is assumed in our forecasts. It should be noted that these projections were made before the Table of Life Expectancy based on the 1961 census was available and that some revision may be necesary in the light of that table. It is unlikely, however, that any such revision would materially affect the size of the population of school-going age, though it might affect the size of the older age groups.

EMIGRATION

2.6 Emigration is of crucial importance in the projections: on the one hand it has a marked effect on the size and structure of the population, while on the other hand it is the factor on which the least amount of data is available. The major source of data is the census, but the censuses are taken only at intervals of five or ten years and can give only the aggregate emigration for those periods. It is difficult to arrive at reliable estimates of the age/sex composition or of the annual totals of emigration. The movement of persons in and out of the country (' net passenger movements ') can be taken as giving some indication of the annual total. Even this, however, is subject to much uncertainty. People can move between Ireland and the United Kingdom without official formalities. The annual number of movements into and out of Ireland, not counting transit passengers, was of the order of seventeen million in 1964 (Irish Statistical Bulletin). It will be seen that the problem of thus measuring an emigration which is of the order of some tens of thousands annually is inherently difficult. The use of the ' net passenger movements ' was, however, tried in the years preceding 1961 and was confirmed to a reasonable extent for those years by the results of the census in 1961.

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[3] In 1961, 32 per cent of men and 22 per cent. of women aged 40-45 were unmarried.

[4] Just under 200 births per 1,000 married women aged 15–49 years.

[5] 22.3 per 1,000. [6] 11.9 per 1,000 (Vital Statistics, 1961).

[7] The term 'emigration' is used here, and later, as being synonymous with net emigration, i.e., the excess of emigration over immigration.

2.7 The net emigration between censuses has been as follows (reduced to average annual figures for each intercensal period) :

TABLE 2.1

Net Emigration between Censuses, 1926–61

thousands

Period	1926–36	1936–46	1946–51	1951–56	1956–61
Average Yearly Net Emigration	16.7	18.7	23.9	39.4	42.4

Source: Statistical Abstract, 1964.

This emigration, being drawn mainly from the 15-39 age groups, has had a distorting effect on the structure of the population, giving, *inter alia*, a high proportion of persons either under 15 or over 65 years of age.[*]

2.8 In deciding on the assumptions to be made about future emigration, there were certain constraints to be met. Firstly, the assumptions must accord with the expectation of the Second Programme for Economic Expansion that emigration be reduced to 10,000 a year by 1970. Secondly, they must be compatible with that programme in the sense of providing a working-age population adequate for its employment targets. Thirdly, they must be in general accord with the indications given by the net passenger movements in recent years, which suggest that emigration has declined to a level about half that obtaining in the period 1951/61. The projections that we use are based on the assumption that the rate of emigration for the five year period 1961/66 will be half the rate experienced in the period 1951/61, while for the succeeding periods 1966/71 and 1971/76 it will be one quarter of the 1951/61 figure. (This assumption is referred to subsequently as hypothesis A (2)). Since emigration averaged 40,850 per annum during the 1951/61 period, this would mean an annual average of approximately 20,000 during the first five year period and 10,000 during the two latter periods. Of the various hypotheses tested it was found that this hypothesis would best satisfy the constraints listed above. It was assumed that the composition of these totals as regards age groups and sex would remain more or less the same as that experienced during the 1956/61 period, as an analysis of the change in patterns between successive censuses in the past did not reveal consistent trends.

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[*] In 1961, 31·1 per cent. of the total population were under 15 and 11·2 per cent. were 65 or over. The percentage of dependants, i.e., not economically active, was 60·7 per cent.—only a small proportion of married women being classified as economically active. (Derived from Census reports.)

METHOD OF FORECASTING

2.9 The first step was to predict the proportions of the existing population, by age group, which would survive in Ireland in 1966, 1971 and 1976. This was done on the basis of survival rates derived from the censuses and of the emigration hypothesis of the previous paragraph, allowance being made for the slight downward trend in death rates assumed in paragraph 2.5. This gave an estimate of the population over 5 years of age in 1966, over 10 years in 1971 and over 15 years in 1976.[9]

BIRTHS

2.10 The projection of the remainder of the population in those years involved projecting the number of births in the intervening years[10] and the survivals from those births. This in turn involved consideration of the marriage rates and fertility rates. As a combination of those two factors the number of births per 1,000 women in each five year age group from 15 to 49 was used. These rates were found[11] to have increased in recent years, particularly in the age range 15 to 29, but it was decided to adhere to the average 1961-63 rates. These rates were then applied to the projected number of women aged 15 to 49 to give estimates of the births for 1966, 1971 and 1976, the births in the other years being derived by interpolation.

2.11 Since we have predicted that the number of women in the age range 15-49 will increase appreciably, it follows that our projections involve a steady increase in the number of births. The projections envisage 64,700 births in 1970 and 72,200 in 1975 compared with 60,700 in 1960 and an average of 61,700 for the ten years 1951-1960. The highest figure recorded between 1930 and 1964 was 69,000 in 1947. It will be appreciated, however, that the decision in paragraph 2.10 to use the 1961/63 rates is a conservative one and that the projected increase in births would be considerably greater if a continuation of past increases in those rates were assumed.

PROJECTED POPULATION

2.12 Table 2.2 shows the projected population by five year age group, male and female, for 1966, 1971, 1976, on the basis of the emigration hypothesis A(2) described in Paragraph 2.8 A table showing population by individual years of age, for the school-going ages, for each year from 1961 to 1971 and for 1976, will be found in the Appendix.[12]

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[9] The general procedure is described in Appendix II.

[10] Data were available on births up to and including 1964. *See* Appendix, Table II.5.

[11] Table II.7 Appendix.

[12] Table II.4.

TABLE 2.2

Projected Population, 1966, 1971, 1976 by Five Year Age Group and Sex. On Emigration Hypothesis A (2)[*]

thousands

AGE GROUP	MALES				FEMALES				TOTAL			
	1961[1]	1966[2]	1971[2]	1976[2]	1961[1]	1966[2]	1971[2]	1976[2]	1961[1]	1966[2]	1971[2]	1976[2]
0—4	153·4	155	157	167	147·4	145	150	160	300·8	300	307	327
5—9	147·0	149	153	154	140·7	144	143	147	287·7	293	296	301
10—14	148·3	145	148	152	140·5	138	142	141	288·8	283	290	293
15—19	120·3	138	139	143	113·5	129	131	136	233·8	267	270	279
20—24	80·4	100	126	128	77·6	96	119	122	158·0	196	245	250
25—29	72·3	72	94	119	73·1	70	91	113	145·4	142	185	232
30—34	75·2	68	69	91	77·5	69	68	88	152·8	137	137	179
35—39	81·6	72	66	67	85·2	75	68	67	166·8	147	134	134
40—44	84·8	78	70	64	85·5	81	73	66	170·3	159	143	130
45—49	89·0	81	75	67	85·6	82	79	71	174·6	163	154	138
50—54	81·7	84	77	71	75·4	82	79	76	157·1	166	156	147
55—59	68·6	75	78	71	67·5	71	78	75	136·1	146	156	146
60—64	64·4	61	67	69	66·6	62	65	72	131·1	123	132	141
65 and over	149·3	153	153	158	165·7	177	181	186	315·1	330	334	344
Total	1,416	1,431	1,472	1,521	1,402	1,421	1,467	1,520	2,818	2,852	2,939	3,041
Total 0—14	449	449	458	473	429	427	435	448	877	876	893	921
Total 15—64	818	829	861	890	808	817	851	886	1,626	1,646	1,712	1,776
Total 65 and over	149	153	153	158	166	177	181	186	315	330	334	344

[*] Rate of Emigration 1961/66 to be half the 1951/61 rate: rate of emigration 1966/71 and 1971/76 to be a quarter of the 1951/61 rate.

[1] Actual. Census 1961. [2] The figures above the lines involve projection of births.

2.13 These projections point to an increase in population over the period, and hence a reversal of the trend of population decline that has persisted for more than a century. Since the previous decade 1951/61 was a period of heavy emigration this change should also lead to changes in the structure of the population. It would be particularly marked in the 20 to 39 age range, the number in which was abnormally small in 1961: in fact over three-quarters of the total projected increase between 1961 and 1976 would be contained in that age range, giving it a 28 per cent increase compared with 2 per cent for the remainder. Such a change in population structure may well be accompanied by changes in associated demographic phenomena such as marriage and birth rates.

ALTERNATIVE HYPOTHESES

2.14 As the population projection given above is based on a particular assumption regarding the level of emigration, it is prudent to consider as well the effects of other assumptions as bases. In Table 2.3 a summary is given of alternative projections based on different hypotheses regarding emigration. Hypothesis A (2) is the one already used. In hypothesis A (1) a higher level, and in A (3) a lower level of emigration is assumed, the respective fractions of 1951/61 emigration being ½, ½, ¼ in A (1) and ¼, ¼, ¼ in A (3), the fractions referring as before to the five year periods 1961/66, 1966/71 and 1971/76.

2.15 It will be seen from Table 2.3 that the choice of hypothesis, as between those three, has a marked effect on the size of the 15-64 group and hence on the potential size of the available labour force. This, as has been mentioned in paragraph 2.1 above, would also react on enrolments of pupils over the school-leaving age. The effect of the choice of hypothesis on the 0-14 group takes place more slowly so that it does not seriously affect the estimates of pupil numbers in that range within the period covered by the projections, though it would clearly affect them over a longer term. The size of the over 65 group is, of course, hardly affected at all by relatively short term assumptions regarding emigration.

2.16 It will be noted that all three of the hypotheses considered above involve a sharp decrease in emigration as compared with the period 1951/61. In this context one must, of course, advert to the possible effects that changes in economic opportunities abroad may have on emigration from Ireland. In particular, one must consider the possible manpower position in Great Britain, the main destination of our emigrants. A recent report[13] on the projected supply and demand

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[13] *The Pattern of the Future*, Ministry of Labour (H.M.S.O.).

TABLE 2.3

Projections of Population, by Major Age Groups, on Different Emigration Hypotheses.

thousands

Age Group / Year	1961 Actual[1]	Emigration Hypothesis A(1)*			Emigration Hypothesis A(2)*			Emigration Hypothesis A(3)*		
		1966 E=[illegible]	1971 E=([illegible]; [illegible])	1976 E=([illegible]; [illegible]; [illegible])	1966 E=[illegible]	1971 E=([illegible]; [illegible])	1976 E=([illegible]; [illegible]; [illegible])	1966 E=[illegible]	1971 E=([illegible]; [illegible])	1976 E=([illegible]; [illegible]; [illegible])
Males										
0—14	449	449	456	466	449	458	473	453	464	478
15—64	818	829	834	863	829	861	890	853	886	915
65 and over	149	153	153	157	153	153	158	153	153	158
Females										
0—14	429	427	432	438	427	435	448	430	439	453
15—64	808	817	826	861	817	851	886	843	879	913
65 and over	166	177	181	186	177	181	186	177	181	187
Totals, Males and Females	2,818	2,852	2,882	2,971	2,852	2,939	3,041	2,909	3,002	3,104

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* The fraction shown for 'E' in each case are the fractions of the 1951/61 rate of emigration which are postulated for the three five year periods from 1961 to 1976.

[1] Census 1961.

for labour in the United Kingdom in the coming decade predicts that, owing to demographic factors and the increased numbers staying at school, the supply of labour will grow relatively slowly while the demand for labour will increase more rapidly—given a satisfactory rate of long term growth. It would seem, in addition, that expected restrictions on immigration from the Commonwealth might well increase the opportunities for workers from Ireland. Such considerations suggest that it would be rash to assume too great a decline in net emigration from Ireland, at least in the short or medium term.

REGIONAL DISTRIBUTION

2.17 It is also desirable to project the regional distribution of the future population. Such projections are necessary because changes in the distribution of the population would obviously be relevant to many educational questions such as, for instance, the size and location of new schools.

2.18 The projections were done (i) by town and rural areas and (ii) by province. 'Town areas' here are as defined in the Census, consisting of all towns and cities having a population of over 1,500 including suburbs and environs. There were just under 100 such towns and cities in Ireland in 1961, about half of them having less than 3,000 of a population. 'Rural areas' consist of the remainder.

2.19 Between 1951 and 1961 the population[14] in town areas increased by 2 per cent and that in rural areas decreased by 10 per cent (the 1951 census figures being adjusted for some changes in classification). Our projections for 1971 are based on an analysis of those changes. Firstly, the number of persons in each age group in town areas in 1951 was compared with the number in the corresponding age group (i.e. 10 years older) in town areas in 1961, and similarly for rural areas. For example there were 119,400 persons aged 5-9 in the town areas in 1951 while there were 112,100 aged 15-19 in town areas in 1961, a net decline of about 6 per cent. In the rural areas, on the other hand, there was a net decline of almost 25 per cent from 161,700 aged 5-9 in 1951 to 121,700 aged 15-19 in 1961. Secondly, the distribution of each age group as between town and rural areas in 1951 was compared with the distribution in 1961. For example, in 1951 there were 161,700 children aged 5-9 in rural areas, that is 57.5 per cent of the 5-9 age group: in 1961 there were only 153,900 aged 5-9 in rural areas, that is 53.5 per cent of the 5-9 age group. The projections are summarised by major age groups in Table 2.4: a table by five year age groups is given in the appendix.[15] These projections imply that, as compared with 1951-1961, the decline in the rural areas will fall from 10 to 3.7 per cent and that the increase in the town areas will rise from 2 to 13.66 per cent.

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[14] *Source:* Census of Population reports.
[15] Table II.10.

TABLE 2.4

Population, Past and Projected, by Town and Rural Areas, by Major Age Groups

Age Group thousands

Year	Grand Total	Total		0-14		15-64		65 and over	
		Town	Rural	Town	Rural	Town	Rural	Town	Rural
1951* ..	2,961	1,274	1,687	373	482	796	994	105	211
1961 ..	2,818	1,299	1,519	412	466	769	857	118	197
1966 ..	2,852	1,360	1,492	432	444	796	850	132	198
1971 ..	2,939	1,475	1,464	464	429	872	840	139	195

*Adjusted to 1961 classification.

2.20 The phenomenon of an increase in population in the town areas and a decrease in the rural areas[16] is, of course, not new, nor is it peculiar to Ireland. The examples of the previous paragraphs will illustrate its relevance to education. They show a considerable decrease between 1951 and 1961 in the numbers aged 5-9 in the rural areas: they also indicate that an appreciable number who were in rural areas while of school-going age had left those areas within ten years. Those factors point to the necessity for flexibility both as regards physical resources and the content of the education provided.

PROVINCES

2.21 Table 2.5 shows the projected distribution by province, based on a similar methodology. This shows an increase in Leinster and Munster between 1961 and 1971, thus reversing the change in 1951-61, and a decrease in Connacht and Ulster (3 Counties). Further analysis indicates that the bulk of the increase in Leinster would occur in the Dublin area.[17]

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[16] It may be noted here that 19·4 per cent. of those returned as farmers in the 1951 Census had holdings of less than 15 acres. *See* Appendix, VI. Table 26.

[17] Appendix, Tables 11.12, and 13.

TABLE 2.5

Population, Past and Projected, by Province, by Major Age Groups

thousands

Province	Year	Total	0-14	15-64	65 and over
Leinster	1951	1,337	393	824	120
	1961	1,332	426	779	127
	1966	1,376	435	803	138
	1971	1,466	460	864	142
Munster	1951	899	254	542	103
	1961	849	259	489	101
	1966	860	260	496	104
	1971	873	260	507	106
Connacht	1951	472	135	275	62
	1961	420	128	234	58
	1966	409	121	229	59
	1971	400	117	225	58
Ulster (3 Counties) ..	1951	253	72	149	32
	1961	218	65	124	29
	1966	208	60	119	29
	1971	200	56	116	28

2.22 In making these projections of the regional shift in population no allowance has been made for the introduction of new policies, as foreshadowed in recent years, designed to counteract such movement. Educational provision would obviously be defective unless it took into account changes in policies. Since the educational projections in later chapters are based on our population forecasts, it is important that the appropriate revisions be made as new demographic data becomes available. A suitable opportunity for such a revision will be afforded by a census in 1966.

CHAPTER THREE

Forecasts of Pupil Enrolments[1]

3.1 The population projections described in the last chapter were used as a basis for forecasting the number of pupils in the various divisions of the educational sector in the years ahead. These forecasts have two main functions. They are essential, firstly, in estimating the resources—teachers, buildings etc.—that will be required by the educational system and, secondly, in gauging how far the system is likely to meet the demands to be made on it, so that if deficiencies are indicated remedial action can be taken in good time. In the context of Ireland's economic development programme, for example, such forecasts are necessary in estimating whether persons with various levels of qualification are likely to become available from the educational system in the numbers required.

3.2 These projections are no more than a picture of the future as we see it today in the light of the available information. The future is always uncertain and all the more so when personal choice and public policy are involved : the more choice a system allows the less accuracy can be expected of forecasts. It is essential, then, that the projections be revised as new data become available or as significant changes in policy are evolved and evaluated. This, however, in no way takes from the necessity of making the best use of present knowledge to try to foresee future difficulties, and therein lies the value of projections. They serve as an advance warning of problems ahead, so that remedial measures can be set in train in good time. The need for timely warning is all the greater where, as is generally the case in education, some years must elapse between the initiation of a course of action and the time its objectives can be realised.

3.3 The projections given in this chapter, and the resource and financial flows derived from them in the two succeeding chapters, assume no change in the educational system other than those already announced, as described in the next paragraph. This enables us later to estimate how far the system without further change would meet the demands likely to be made on it. We do not at this stage attempt to make alternative projections specifically based on the assumption of meeting particular objectives.

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[1] 'Enrolment' means the total number on rolls at a given time: it does not refer solely to new entrants. We use 'stock' in the same sense.

3.4 The need to take account of certain impending changes in the educational system added to our problems and to the uncertainty: these changes had been announced but no very precise information about them was available at the time these projections were made (1964). The changes are, first, the raising of the compulsory school-leaving age by one year to 15 by the end of the decade and secondly, the changes in vocational school courses announced by the Minister for Education in May, 1963, chief of which were the extension of the two-year continuation course to three years and the introduction of a technical leaving certificate course of two years' duration. The Minister also announced the introduction of a new form of post-primary school, termed comprehensive, to provide both vocational (continuation) and grammar-type courses for scattered communities. In projecting the future situation it has been assumed that the new school-leaving age will be in force as from the beginning of the school-year 1970/71. The extra numbers at school as a result of this change are expected to be distributed between primary, secondary and vocational schools as will emerge from the discussion below. In the case of the three-year continuation course in vocational schools it was assumed that this would lead to an increase in the number of 15 and 16 year olds staying on at school; the technical leaving certificate course was likewise assumed to lead to an increase in participation by 17 and 18 year olds. It is assumed that both of those courses will be in operation by 1970/71.

3.5 The main data on which these projections are based are given in Appendix III A. The kind of data which would enable changes in enrolments in the past to be analysed in relation to factors such as the location and social grouping of the pupils was not available. A further difficulty was that the available data were not always suitable for analytical work—the collection of statistics by the Department had, not unreasonably, been confined mainly to those deemed necessary for purposes of immediate administration and public accountability.

3.6 Our projections are shown in Table 3.1 which gives the projected number of pupils in full-time education in 1970/71. The 1963/64 figures are given for comparison. The figures for secondary, secondary top and vocational schools refer to the beginning of the school-year in each case, since those are the figures on which requirements of teachers and rooms in those schools are based. The remaining figures refer to February, 1964 and 1971, as other data were not available. In most of the latter cases, apart from the national schools and the non-aided commercial schools, it is thought unlikely that the enrolments would vary appreciably during the school-year. The division of the schools by type is based on present classification—we do not purport to give the classification of schools as it will be in

1970/71. By then some secondary tops may have become secondary schools and vice versa, some secondary and vocational schools may have become comprehensive schools and some non-aided schools may have become aided. We are not in a position to predict what form such changes may take.

TABLE 3.1

Projected Number of Pupils in Full-time Education, 1970/71, by Type of School and Level

Reference in text	Type of School or College	Number of Pupils 1963/64[1]	Projected Number of Pupils[2] 1970/71
Paragraph	*First Level:*		
29	National School	472,124	481,200
27	Special School	2,793	5,000
28	Non-aided Primary	21,151	28,500
	Total First Level	496,068	514,700
	Second Level:		
15, 24	Secondary Top	6,779[3]	8,100[4]
9, 22	Secondary School	89,205[3]	114,000[4]
12	Vocational (Continuation)	30,671[3]	38,000
23	Vocational (Technical)	1,607[3]	5,000[5]
16	Comprehensive	—	2,500[6]
25	Residential Domestic	381	500
25	Other Aided	1,112	1,500
25	Non-Aided	2,652	3,000
	Total Second Level	132,407	172,600
	Third Level:		
36	University	13,153	19,000
	Teacher Training: National	1,108	1,200
41	Teacher Training: Domestic	163	160
	Teacher Training: Vocational	66	70
	Teacher Training: Non-aided	253	250
42	Other Aided	290	400
42	Non-aided Religious	1,786	2,500
	Total Third Level	16,819	23,580
	Grand Total	645,294	710,880

[1], [2] February figures except for secondary, secondary top and vocational—see paragraph 3.6.

[3] Annual Report 1963/64 (prior to publication).

[4] The junior and senior cycle figures are given in Tables 3.3 and 3.4.

[5] Including some third level.

[6] See paragraph 3.16.

3.7 Table 3.2 shows, in somewhat less detail, the projected age distribution of pupils as of February 1971, the number of second level pupils here being somewhat less than in Table 3.1 to allow for dropout between the beginning of the school-year and February 1971. It also shows the percentage participation by each of the age groups, based on the population as projected in chapter 2. A comparison

TABLE 3.2

Projected Number of Pupils in Full-time Education, by Age and Level February 1971

(in thousands)

Level	Age on 1 February, 1971										TOTAL
	4 and 5	6 to 12	13	14	15	16	17	18	19	20 and over	
	Number of Pupils (in thousands)										
FIRST LEVEL : National School	66·5	375·2	27·0	11·5	0·9	0·1	—	—	—	—	481·2
Special School	0·5	3·0	0·5	0·4	0·4	0·1	0·1	—	—	—	5·0
Non-aided Primary School	5·6	22·9	—	—	—	—	—	—	—	—	28·5
Total First Level	72·6	401·1	27·5	11·9	1·3	0·2	0·1	—	—	—	514·7
SECOND LEVEL : Junior Cycle (Aided)	—	7·7	29·0	42·4	33·5	12·0	1·2	0·2	—	—	126·0
Senior Cycle (Aided) ..	—	—		0·1	3·4	14·3	14·5	5·6	1·8	0·3	40·0[1]
Non-Aided	—	—	0·1	0·2	0·2	0·5	0·7	0·8	0·3	0·2	3·0
Total Second Level	—	7·7	29·1	42·7	37·1	26·8	16·4	6·6	2·1	0·5	169·0
THIRD LEVEL : University	—	—	—	—	—	—	0·9	2·8	3·3	12·0	19·0
Teacher Training (Aided)	—	—		—	—	—	0·1	0·3	0·4	0·6	1·4
Other Aided	—	—	—	—	—	—	—	0·1	0·1	0·2	0·4
Non-aided Teacher Training . ..	—	—	—	—	—		—	0·1	0·1	0·1	0·3
Non-aided Religious	—	—	—	—	—	—	0·1	0·1	0·2	2·1	2·5
Total Third Level	—	—	—	—	—	—	1·1	3·4	4·1	15·0	23·6
TOTAL FULL-TIME EDUCATION	72·6	408·8	56·6	54·6	38·4	27·0	17·6	10·0	6·2	15·5	707·3
POPULATION[2] (Estimated)	121,000	410,900	57,500	57,000	55,100	55,500	53,900	53,800	50,700	245,300[3]	
PERCENTAGE PARTICIPATION	60·0	99·5	98·4	95·8	69·7	48·6	32·7	18·6	12·2	6·3	
1963/64 PARTICIPATION (Table 1.2) ..	58·0	98·8	94·6	66·4	51·5	36·8	24·8	14·5	8·8	6·6	

[1] Includes some third level. [2] Appendix II, Table 4. [3] Population in 20-24 age group.

with the corresponding figures for 1963/64 (Table 1.2) shows a considerable increase in participation by all groups with the exception of the 20-24 group. In the latter case the actual numbers show an increase of 35 per cent, but since the estimated population shows an increase of 40 per cent the participation rate actually decreases. However when students from outside the State are subtracted the percentage shows an increase. The large increase for the 14 year olds of course reflects the raising of the school-leaving age.

3.8 We now outline the background to these projections. A more detailed account of how the projections were made, and the relevant data, will be found in Appendix III. A. In the presentation below we begin with a projection of the enrolments in the second level rather than in the first level. We have found this more convenient, and indeed more logical as will be made clear in the course of the chapter, mainly because of the overlapping of the levels in regard to age, as shown in Table 1.2.

SECOND LEVEL, JUNIOR CYCLE

3.9 There has been a steady expansion in the number of pupils in secondary schools over the last thirty years,[2] and the rate of increase has been rising. In projecting entrants for the next ten years the trends in various coefficients were investigated. Cognisance was taken of two in particular: the ratio of entrants in census years to the number of 13 year olds in the population,[3] and the ratio of entrants to the numbers in fifth standard two years previously.[4] The correlation between those ratios and certain economic indicators such as income per head was also investigated. While the ages of entrants at present range from 11 to 15 years,[5] there has been a gradual but persistent move towards earlier entry over the last thirty years, and this we assume to continue.

3.10 In the absence of detailed statistical data we have based our projection of junior cycle stock in the secondary schools on the trend in the ratio of stock to the sum of the entrants in the three preceding years. This ratio[6] has risen from 0.87 in 1934/35 to 0.94 in 1963/64. We assume the increase in this ratio to continue, partly because the raising of the school-leaving age may reduce drop-out by 14 and 15 year olds. This does not mean, however, that we are projecting the elimination of drop-out altogether, as a number of pupils will no doubt continue to spend four years in the junior cycle.

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[2] Graph 3.1.

[3] Appendix III, Graph 4.

[4] Appendix, Graphs 3.

[5] Annual Reports.

[6] Appendix, Graph 5.

3.11 The projected increase in entries to secondary schools assumes that an increased proportion of parents are able and willing to pay the appropriate fees, and that the schools will have the necessary capacity and facilities. The ability of the parents to pay the fees is based on the assumption that the targets of the Second Programme for Economic Expansion are achieved and that there is no radical change in the trend in fees. Other direct costs such as books and transport, indirect costs such as the maintenance of the children and the foregoing of their potential earnings may, however, be bigger problems for many. As regards capacity and facilities, we discuss in the next two chapters the resources needed to cater for the increased number of pupils. the projections in this chapter of course assume the provision of those resources in adequate measure. It may be noted here that grants have recently been introduced for the building or extension of secondary schools.

3.12 The total enrolment in junior cycle (continuation) courses in the vocational schools[7] has grown at a slightly slower rate in the past ten years than has the junior stock in the secondary schools. There were no data on entrants but we obtained the figures for the five years 1959/63 from the schools.[8] The rate of increase in entrants was just over 3 per cent per annum for that period, but the increases varied considerably from year to year. It may be noted here that the school-leavers survey, described in chapter six, indicates that these entrants include an appreciable number of transfers from secondary schools—an estimated 2,400 in 1963/64. We have seen that it is proposed to extend the continuation course in the vocational schools from two to three years and to introduce a technical leaving certificate. It may well be that this and other changes will lead to some changes in preference as between secondary and vocational schools. In the absence of any data or other indicators of such changes in preference, however, we assume that the rate of increase in entrants to the vocational schools will be the same as that for the secondary schools: this implies a slight increase in relative preference for vocational schools.

3.13 As regards the ages of entrants to continuation courses, at present the prescribed minimum age is 13 if the pupil has completed the sixth standard of the national schools, and 14 if not. This means that pupils completing a three year course would almost all be 16 or over, whereas at present half of those completing the junior cycle in the secondary schools are under 16.[9] It may well be then that the present age requirements will be altered. In these projections, however, no change in the present regulations is assumed, but it is assumed that the entry will tend to be at 13 rather than 14.

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[7] Graph 3.1.

[8] Chapter 6, par. 6.16.

[9] Appendix III,B

3.14 In estimating the total enrolment in the continuation classes we assume that the three year course will be introduced in 1966/7 and will be fully operative by 1970/71. It is also assumed that the raising of the school-leaving age will reduce the drop-out[10] from the first and second years of the course. It is assumed, however, that there will still be a certificate examination at the end of the second year as at present and that this will be taken by the majority. The requirements of An Cheárd-Chomhairle (National Apprenticeship Board) regarding age limits and standards will, of course, be of considerable relevance here. It is expected that about one-sixth of the pupils, that is, about 6,000 of them, will be in third year classes in 1970/71. At present a small number of pupils remain in continuation courses for three years.

3.15 The only information available on secondary tops for past years related to total number of pupils. We obtained the figures for the junior and senior cycles for 1963 and 1964, however, and we were able to estimate entrants[11] in those years, though not by age. We also estimated junior and senior stock for past years, as described in Appendix III A. Our projections assume much the same rate of increase in entrants here as in the secondary schools, though not quite as high an increase in stock.

3.16 The projection of enrolments in the proposed comprehensive schools must, of course, be rather indefinite as none of these schools is functioning at present. They are intended to provide post-primary courses covering both vocational and secondary type subjects, for areas which are inadequately catered for at present. While some areas have already been selected for comprehensive schools, it may be assumed that the first of these schools is unlikely to open before the autumn of 1966. As it would take three years to build up the full pupil complement, it would be 1968/9 before any such school was fully functioning at the junior level. On the assumption that five schools were provided annually with an average enrolment when fully operative of 250 pupils, the number of pupils in such schools would be of the order of 5,000 in 1970/71. These would almost all be extra pupils if the schools were all built in areas where the establishment of a school in the ordinary way was unlikely. However, as it appears that some comprehensive schools will be formed by the extension or amalgamation of existing schools, it seems reasonable to assume that not more than half of those pupils, that is, 2,500 of them, will be additional to those we have projected as being in secondary or vocational schools. For convenience we list only those 2,500 under 'comprehensive' in Tables 3.1 and 3.3 and only the corresponding figure of 1,000 entrants in Table 3.3. In the absence of other indications we take the age distribution of the pupils to be the same as that for the junior cycle of the vocational schools.

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[10] Chapter 6, par. 68.

[11] Appendix VI, par. 7.

3.17 The projected entrants and stock for the junior cycle, second level, and the 1963/64 figures are shown in Table 3.3.

TABLE 3.3

Second Level, Junior Cycle: Projected Entrants and Stock, 1970/71, *by Type of School*

Type of School	Entrants 1963/64	Projected Entrants 1970/71	Junior Stock 1963/64	Projected Junior Stock 1970/71
Secondary ..	23,730[1]	27,400	65,429[2]	81,500
Secondary Top ..	2,250[3]	2,600	5,800[4]	7,000
Vocational (Continuation)	16,014[5]	18,500	30,671[6]	38,000
Comprehensive ..	—	1,000	—	2,500[7]
Total ..	41,994	49,500	101,900	129,000

[1], [2], [6] Annual Report 1963/64 (prior to publication).
[3] Estimated, Appendix, paragraph VI.8.
[4] Estimated from total stock and February 1964 data.
[5] Data supplied by Chief Executive Officers (cf. par. 3.12).
[7] Cf. par. 3.16.

3.18 It will be seen that the projections shown in Table 3.3 involve something of a slowing down in the rates of growth of recent years. This may seem surprising, particularly in view of the raising of the school-leaving age and the provision of new courses. There are some factors to be borne in mind in this regard, however. Firstly, the survey of pupils in chapter six indicates that further increases in participation would have to come largely from the lower income groups : secondly, chapter nine indicates that an appreciable number of pupils do not complete the primary programme : thirdly, the figures in chapter twelve show than an appreciable number of pupils live at a considerable distance from post-primary centres. Now the projections in this chapter are based on the educational system as it is, modified only by recent Departmental announcements : they therefore, do not assume such measures as the general provision of maintenance grants for poor pupils, remedial classes in national schools in general, or general transport facilities.

3.19 We have not assumed a change in the regulations concerning age of entry to post-primary schools, in the absence of any announcement to that effect. If the age of entry to vocational schools were lowered, and the lower age also applied to comprehensive schools, the pattern of enrolments could be greatly changed.

3.20 In order to estimate the number who will not proceed to post-primary school we assume[12] that the numbers moving out of primary schools, to post-primary schools or to leave altogether, in any year is roughly equal to the number aged 13 in the population. The estimated figure[13] for 1970 is 57,400, from which we subtract 3,000 as leaving from non-aided primary schools and 500 as being in special schools. That leaves just 54,000 to be accounted for. Table 3.3 shows 24,400 of those entering secondary school (27,400 less the 3,000 from non-aided primary), 16,100 entering vocational school (18,500 less 2,400 transfers), 2,600 entering secondary tops and 1,000 entering comprehensive schools, a total of 44,100. That means that just under 10,000 pupils of that cohort will not go to post-primary school. This compares with a figure[14] of some 17,000 in 1963. In 1970, of course, those pupils would have to remain on in primary (national) school owing to the raising of the school-leaving age.

SECOND LEVEL, SENIOR CYCLE

3.21 The next step was to project total enrolments of senior cycle post-primary pupils. These will consist of pupils following the leaving certificate course in secondary schools and secondary tops, whole-time technical pupils in vocational schools including those following the proposed technical leaving certificate course, and pupils at other second level schools or colleges, most of whom are regarded as senior cycle.

3.22 In the secondary schools the trend for the past thirty years has been for an increasing proportion of pupils to stay on for the leaving certificate course. Senior cycle entrants as a proportion of those moving out of the junior cycle have been rising steadily,[15] to 60 per cent in 1963. We do not, however, assume the proportion to go beyond 70 per cent in future. Making due allowance for drop-out, the number of senior cycle pupils is projected to be 32,500 in 1970/71 and 37,500 in 1975/6.

3.23 The position as regards the senior cycle in the vocational schools is rather uncertain at present. In the past the small number of senior pupils (1,607 in February, 1964) were students following courses for specialised occupations and included about six hundred doing third-level courses. For the forecast period, however, it is also necessary to take account of pupils who will be following the proposed technical leaving certificate course. In the immediate years ahead, those pupil numbers should to a large extent reflect the rate at which facilities will be made available. At the present time, only Dublin, Cork, Limerick, and Waterford are equipped to provide such a course. The Minister for Education has, however, announced that regional technical colleges will be built in five other centres. In addition it is understood that each of the other vocational committees is expected to provide facilities in a least one major centre. It may be assumed, therefore, that courses will exist in about 30 centres by 1970/71. We understand that enrolment in each of these centres is expected to be about a hundred. Hence 3,000 seems a reasonable estimate of total enrolment in those courses. To this must be added pupils enrolled in the existing types of day technical courses. Allowing for a 25 per cent increase this would give a figure of 2,000, making a total of 5,000 full-time senior pupils in vocational schools and technical colleges by 1970/71.

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[12] Par. 6.74.

[13] Appendix II, Table 4.

[14] Chapter 6, Table 6.24.

[15] Appendix, Graph 6.

3.24 The senior cycle stock in secondary tops was 935 in February, 1963 and 942 in February, 1964. No data were available for earlier years but estimates were made as described in Appendix III. As in the case of the junior cycle, we assume a somewhat slower rate of growth than in the secondary schools.

3.25 The remaining areas of post-primary education are as follows. Non-aided secondary schools accounted for only a few hundred pupils in 1962/63 : a figure of 300 is assumed for 1970/71. An increase to a total of 500 pupils is assumed for residential schools of domestic economy. No data on past trends were available for non-aided commercial and religious schools or for other state-aided schools such as agricultural colleges. The Department of Agriculture expects to

TABLE 3.4

Second Level, Senior Cycle: Projected Stock 1970/71 *by Type of School*

Type of School (as in Table 1.1)	Senior Stock 1963/64	Projected Senior Stock 1970/71
Secondary	23,776[1]	32,500
Secondary Top	979[2]	1,100
Vocational (Technical)	1,607[3]	5,000[4]
Other Aided[5]	1,493[3]	2,000
Non-aided	2,652[3]	3,000
Total	30,507	43,600

[1] Annual Report 1963/64 (prior to publication).

[2] Estimated from total stock and February 1964 data.

[3] As of February 1964.

[4] Including some third level.

[5] Including residential schools of domestic economy.

increase the intake of students in the schools in its sphere by about a hundred : the increase in the other aided schools should be small. In the absence of data, the numbers in non-aided religious and commercial schools are assumed to increase slightly. The projected senior cycle stock and the 1963/64 stock are shown in Table 3.4.

FIRST LEVEL

3.26 In the case of first level education there are, as indicated in chapter one, three types of school to be considered, national schools, non-aided primary schools and special schools. In the national schools the bulk of the pupils fall within the compulsory age group of 6 to 14. Hence it is convenient to treat them as the residual category for these ages. It is known that up to 11 years of age, almost all children not enrolled in either of the two other types of school are enrolled in a national school. From 11 to 14 years account must be taken also of the numbers in secondary and vocational schools.

3.27 Special schools cater for handicapped children. In 1963/4 there were 2,800 pupils in these schools (Table 1.1). A figure of 5,000 pupils is assumed for 1970/1. While the raising of the compulsory school-leaving age is unlikely to have any effect on these schools, it can be safely assumed that there will be a continuing expansion in facilities with a corresponding increase in the number of pupils.[14]

3.28 Data were lacking on the number of pupils in non-aided primary schools in past years. The number and age-composition of the pupils in 1963 and 1964 were obtained from the February censuses. In addition, as part of a general questionaire, we asked these schools to supply details of pupil numbers for each of the years 1958 to 1962. These data indicate that in recent years the annual rate of growth in pupil numbers has been around 5 per cent. Although no information is available as to the reasons for the increased preference for these schools, it seems reasonable to assume that the trend will continue, at least to 1971. Increasing affluence will make it possible for more people to afford education in non-aided schools if they so choose. Pressure on national school facilities in expanding urban areas may also cause more people to send their children to fee-paying schools. Virtually all the non-aided schools at present are in the larger centres of population, three-quarters of them are in the cities of Dublin, Cork, Limerick and Waterford, two-thirds being in Dublin. The fact that some secondary schools restrict entry largely to pupils from their own junior departments may have the same effect : most of the pupils in non-aided schools at present are in those which are junior departments of secondary schools. We assume, therefore, a continuation of the 5 per cent annual increase in enrolments, giving a total enrolment of 28,500 in 1970/71. The age distribution of this total is derived from that at February, 1963. The raising of the school-leaving age should not affect these schools since almost all the pupils transfer to secondary schools around 12 years of age.

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[14] Since this was written the Commission on Mental Handicap has reported to the Minister for Health.

3.29 In projecting enrolments in national schools three main groups must be distinguished. The first two are those outside the compulsory age groups and hence in voluntary attendance at school, i.e. those under 6 years and those 14 years of age or over. The third group is the main body of pupils, those in the compulsory range of 6 to 14 years, who must be in some school. However, as we have pointed out, from the age of 11 children may be in post-primary schools. For this reason it was more feasible to treat the national schools as a residual sector, projecting first the numbers in the other first level establishments and in the junior cycle of secondary, vocational and comprehensive schools.

3.30 Although education is not compulsory until the age of 6, in practice the majority of children start school before that age. There appears to have been a trend towards increased participation of 4 and 5 year olds in primary education. We feel this trend will continue, although the rate will be affected by the practice of schools in regard to enrolment ages, which in turn may be influenced by the capacity of the school or the size of the teaching force. However, as there appears to be a strong trend to earlier starting we have projected 66,500 as the number of 4 and 5 year old children in national schools in February, 1971.

3.31 On the assumption that 99.5 per cent of the 6-12 age group will be at school, and deducting those in non-aided primary schools and special schools and those already in post-primary schools (Table 3.2) we get a total of 375,200 as the number in this age group likely to be in national schools in February, 1971.

3.32 It is necessary to consider the 13 and 14 year olds separately from those over 15 years, and to bear in mind that in 1970/71 the 14 year olds will be in the compulsory range. It will be seen from Table 3.2 that we estimate that 71,800 of the 13-14 age group will be in post-primary schools and 900 in special schools in February, 1971. Since the total number in that age group is estimated at 114,500, this leaves 41,800 to be accounted for. As 100 per cent participation is seldom achieved, for various reasons, we estimate that 38,500 aged 13-14 will be in national schools, of whom some 11,500 will be 14 years of age.

3.33 Finally, there will be some pupils over 15 years of age in national schools. At present, the numbers over the compulsory school age in national schools are significant: in February, 1964, the numbers aged 14 or over totalled 6,591 of whom 1,005 were aged 15 or over.[17] It is doubtful whether this pattern will continue when the school-leaving age is raised, particularly in view of the projected increase in post-primary participation. However, we assume a total of 1,000 pupils aged 15 years or over in national schools in 1970/71.

3.34 The complete projection for national schools (excluding special schools) for February, 1971, therefore, is :—

Under 6 years	66,500
6 to 12 years inclusive	375,200
13 and 14 years	38,500
15 years and over	1,000
TOTAL ..	481,200

THIRD LEVEL

3.35 Projections for the third level must be considered somewhat tentative as a separate body, the Commission on Higher Education, is reporting on third level education. Although there have been informal contacts, we naturally have not had access to the findings of the Commission.

3.36 The number of full-time students in Trinity College (Dublin University) rose from 1,642[18] in 1956/57 to 2,851[19] in 1963/64. It is understood, however, that that university intends to limit its enrolment in future to 3,000: we therefore adopt this figure as the forecast for 1970/71. The numbers in Maynooth have varied very little: in the ten years 1953 to 1962 they ranged only between 533 and 572.[20] As there is no evidence to suggest a radical change, we take 600 as the enrolment in Maynooth in 1970/71. The figure for the College of Surgeons was 783 in February, 1963, and 786 in February, 1964: as the numbers that can be catered for are limited we take a figure of 800 for 1970/71. Any increase in the number of students in future must, therefore, occur almost entirely in the colleges of the National University (excluding Maynooth).

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[17] Those who had become 14 since the beginning of 1964 would have to remain in school until the end of the quarter.

[18] Supplied provisionally by the secretariat of the Commission on Higher Education.

[19] February 1964.

[20] Statistical Abstracts.

3.37 In seeking to project the future position two complications must be taken into account. First, a substantial number of students is from outside the State; secondly, it is necessary to consider the numbers in the various faculties if only because some courses, such as medicine, are of longer duration than others. During the period covered by Graph 3.1 there was a considerable number of full-time university students whose home residence was outside the State. In February, 1964, the proportion was 25 per cent of the total of full-time university students shown in Table 1.1. There has been some change in the composition of this body of students in recent years; the percentage from Northern Ireland has fallen and that from Great Britain and other countries has increased. The education of students from emergent countries will be referred to in a later chapter : in this chapter they are taken into account only in so far as they affect the general projections. The majority of the students from outside the State attend Trinity College. Of the 3,278 in February, 1964, 858 were in the National University, 71 in Maynooth, 570 in the College of Surgeons and 1,779 in Trinity College. As any future increase in student numbers will occur in the National University, it would seem, on the basis of past figures, that students from outside the State as a fraction of total students will decline.

3.38 The projection of entrants to the National University is based on the ratio of the number of entrants to the number who obtain the secondary school leaving certificate in the same year. The recent trend (1957/61) in this ratio[21] is upward from 0.26 in 1957 to 0.31 in 1962. Our projections assume that this is due, at least in part, to the improvement in economic conditions since 1957 and that that improvement will continue. However, for these projections we have taken the ratio to level off at 0.33. The number of leaving certificate passes in future years was derived from the senior cycle stock projected as shown in Table 3.4. The ratio of passes to senior cycle entrants has risen in the last few years to 85 per cent :[22] we assume a ratio of 80 per cent in the coming years. On that basis the number of entrants to the National University (other than Maynooth) is expected to rise to 4,200 in 1970 and 5,000 in 1975. Entrants to Maynooth, Trinity College and the College of Surgeons are assumed to remain more or less constant throughout the period.

3.39 The projection of the undergraduate stock was based on the ratio of stock in a given year to the sum of the entrants in that year and the three preceding years. This ratio[23] rose from 0.82 in 1951/2 to 0.91 in 1958/59 and then declined to 0.87 in 1961/62, the average for the five years 1957 to 1961 being 0.89. The translation of entrants into total enrolment (stock) depends in fact, however, on the field of study chosen. It would appear that on the basis of existing policies, some changes in the proportions in the various faculties will occur. An obvious example is medicine. At present there is a limitation on the number who can be admitted : if this limit is maintained in coming years, the proportion studying medicine will decline. A similar relative decline might also occur in engineering, not only as a result of a limitation on the number of students who can be catered for, but also because the entrance requirements are higher than in other faculties. In projecting the future distribution of students, therefore, it was assumed that numbers in medicine,[24] and engineering and architecture would increase relatively slowly, the bulk of the projected increase in total numbers being apportioned between the remaining faculties. Allowing for the effect which this change in composition would have on length of stay at the university the stock was projected as 0.85 of four year entrants giving 13,400 in 1970 and 16,500 in 1975. The projected distribution by faculty 1970/1 is shown in Table 3.5.

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[21] Appendix III, Table 11.

[22] Appendix III, Table 11.

[23] Appendix, Graph 9.

TABLE 3.5

Projected University Stock 1970/71 by Faculty
(Full-time Students Only[1])

Faculty	National University[2]			Maynooth	Dublin University	College of Surgeons	Total
	Under-graduate	Post-graduate	Total				
Humanities ...	7,400	1,000	8,400	550	1,820	—	10,770
Science	2,000	120	2,120	50	500	—	2,670
Medicine	2,000	50	2,050	—	500	800	3,350
Engineering and Architecture ...	1,000	10	1,010	—	150	—	1,160
Agriculture ...	1,000	20	1,020	—	30	—	1,050
Total ...	13,400	1,200	14,600	600	3,000	800	19,000

[1] Part-time students are shown in Table 3.6.
[2] Excluding Maynooth.

3.40 It is assumed, in the absence of any indications to the contrary, that the trend of post-graduate students in the past decade, when numbers grew at the same rate as undergraduates, will continue This would give a figure on 1970/71 of about 1,200 in the National University.

3.41 The planned increase of one hundred places for national teacher training which should be available by 1966 has been taken into account. On this basis it is assumed that 1,200 student places will be available in 1971. In the case of domestic science teacher training it is assumed that the present capacity will not be increased, in which case a total of 160 students may be assumed. As for Froebel, Montessori, and physical education teachers, a total of 250 students is assumed for 1970/71. Finally, woodwork and metalwork training, where the numbers have remained almost constant over the past decade, is assumed to continue unchanged with a total of 70 students in 1970/71.

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[24] Including dentistry.

3.42. In addition to the universities and teacher training colleges projections of numbers enrolled at other third level establishments were made. A total of 200 was assumed for the National College of Art for 1970/71, while a figure of 200 was assumed for other state-aided institutions for the same year. In the case of non-aided religious institutions a total of 2,500 was assumed. (This figure excludes Maynooth students, all of whom are shown under ' university ').

PART-TIME EDUCATION

3.43 Part-time day students, including part-time technical, in vocational schools increased by 37 per cent between 1952/53 and 1962/63. The indications are that there will be a continuing expansion in all forms of technical education. Part-time technical and other vocational part-time students therefore are expected to reach 8,000 by 1970/71. In addition apprentices should total around 8,000. This figure is based on the assumption that An Cheárd-Comhairle will have succeeded in establishing day release for all apprentices in the major skilled trades apart from building and construction, and for the majority of the apprentices in the latter trades also.

3.44 Enrolments in evening courses in vocational schools have fluctuated between 54,000 and 64,000 over the past decade. In the absence of information on the number and age composition of those taking the different courses, it is difficult to make any worthwhile estimates. It is interesting that while in the county schemes in aggregate the number of individual students has declined from 36,867 in 1951/52 to 30,038 in 1962/63, the numbers in Dublin City, which remained fairly steady around 15,000 to 16,000 for most of the decade, rose to 18,292 in 1962/63.

3.45 The general impression is that the major groups participating in evening courses in vocational schools are young people in the early stages of employment, particularly apprentices and clerical workers, and adults studying such subjects as domestic economy and woodwork. It may be that the wider provision of post-primary education will tend to reduce the demand for some types of evening course. On the other hand, it would tend to increase the number of people who would be in a position to do other types of evening course. A developing economy is likely to create a variety of openings and to require flexibility in developing new and expanded skills. Many people already in the labour force may thus feel a need to enhance old skills or develop new ones. In addition there are several areas in which part-time education is rather inadequately developed at present : a notable and important sector is the distributive trades. A wider provision for those sections can be expected in the future. Nor should the growing importance of leisure be overlooked. The five-day week is now a reality for many people. It does not seem unreasonable to assume that by 1970 there will be a growing demand for adult education unrelated to occupational needs, e.g. courses with a wide cultural and general scientific content. Some expansion in evening course enrolments, therefore, to 64,000 will be assumed by 1970/71.

3.46 Part-time university students, which in the main means evening students, are equally difficult to project. Their number[23] has grown at an uneven rate, but it more than doubled between 1951 and 1961. The continuing expansion in the numbers employed in junior executive positions in administration and in public enterprises, together with a modest increase in the numbers of teachers following the courses, should result in a further increase. A total enrolment of 1,600 is assumed for 1970/71, approximately the same rate of growth as in the last six years. As regards the other areas of part-time education covered in chapter one, an increase of 100 is assumed.

TABLE 3.6

Projected Numbers of Part-time Students by Level, February 1971

Course	Projected Number of Students
Second Level:	
Technical, Day[1]	3,000
Apprentice, Day[2]	8,000
Other vocational, Day	5,000
All vocational, Evening	64,000[3]
Non-aided Commercial	..
Other Second Level	400
Third Level:	
University	1,600
National College of Art	600[3]
Other	..

[1] Includes some third level.

[2] All apprentices, including block release.

[3] Projected total enrolment for the session 1970/71

..=no data available.

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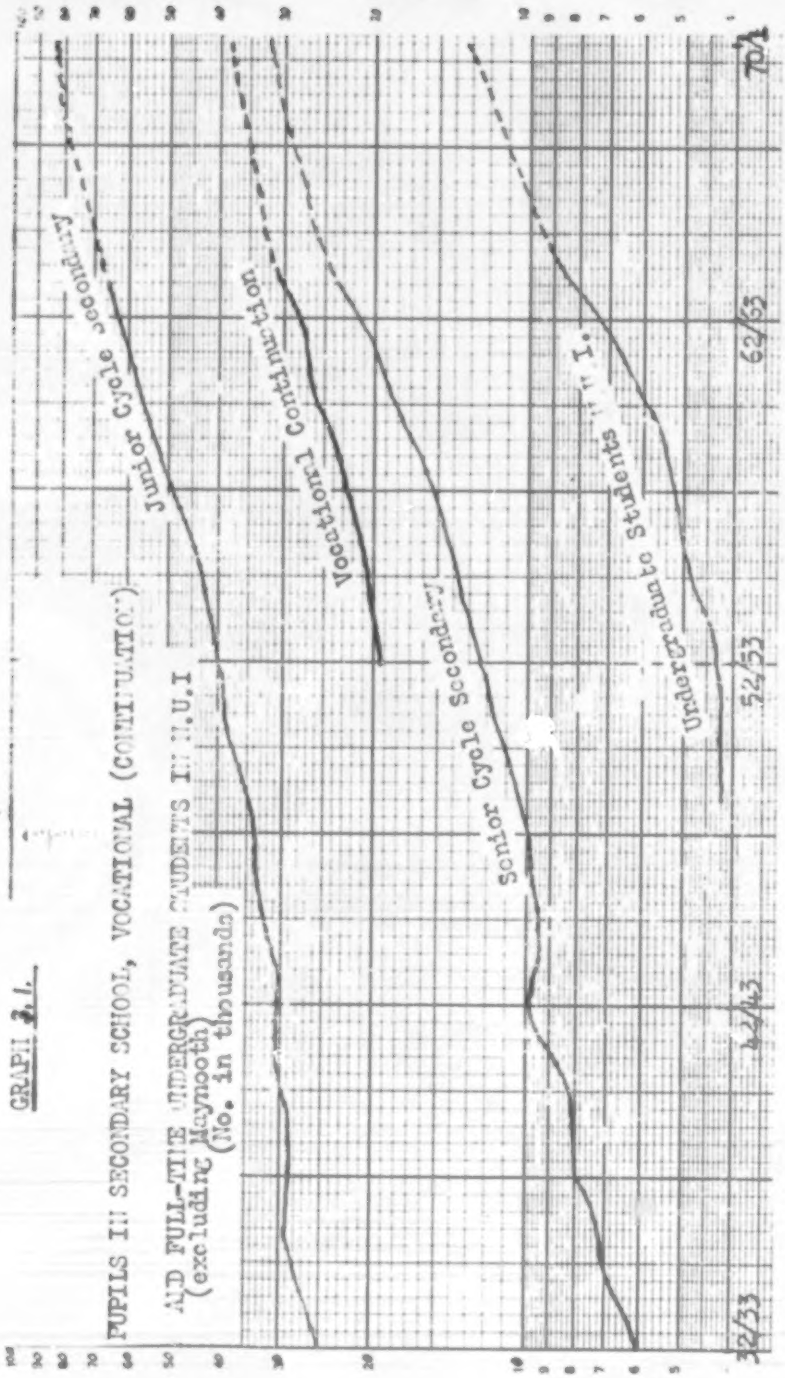
[23] Appendix III, Table 21.

3.47 In the next two chapters an estimate will be made of the resources needed to provide for these numbers of pupils and students and the costs involved. The extent to which the existing system is likely to realise specific objectives is not discussed until later in the report.

GRAPH 2.1.

PUPILS IN SECONDARY SCHOOL, VOCATIONAL (CONTINUATION)

AND FULL-TIME UNDERGRADUATE STUDENTS IN N.U.I
(excluding Maynooth)
(No. in thousands)



CHAPTER FOUR

Projected Requirements and Supply of Teachers and Schools

4.1 In this chapter we consider how many teachers and rooms would be needed to cater for the increased number of pupils projected in chapter 3, on the basis of the present regulations. We also consider here, for the convenience of later discussion, the number of teachers that would be required on the basis of other standards that might be aimed at in future. We then estimate to what extent a continuance of existing arrangements would be likely to make those numbers of teachers and rooms available. We do not at this stage suggest modifications or alternatives to the supply arrangements; we are still concerned with the system as it is. At a later stage of the report, when we have made an analysis of the adequacy or otherwise of the existing system, we shall discuss alternative ways of providing resources and alternative ways of using them.

4.2 Demand for resources has three main components. There is replacement demand, i.e. teachers have to be recruited to take the places of those who leave on retirement or for other reasons, and school places have to be provided to replace obsolete or unsatisfactory accommodation. The second component of demand is expansion demand to cater for an increased enrolment. The third component of demand is target or 'backlog' demand—where it is desired to improve standards of resources allocation. This third aspect of demand will not be considered in this chapter except in regard to pupil/teacher ratios.

FIRST LEVEL

NATIONAL SCHOOLS

4.3 In chapter 3 it has been estimated that there will be 481,200 pupils in national schools in 1970/71, as well as 5,000 in special schools and 8,100 in secondary tops. These latter schools are dealt with here as they employ mostly national teachers. How many teachers are likely to be available? Reference has already been made[1] to future enrolments of student teachers in the training colleges. These enrolments effectively determine the inflow of new teachers into the teaching force. The number of qualified persons who return to teaching after some years' absence is quite small: they are mainly married women. In order to estimate the total teaching force in any period it is also necessary to estimate the outflow. This will be influenced by the age distribution of teachers (Table 4.2), by the extent to which teachers are permitted and are prepared to remain on after retiral age and by the extent to which teachers resign on marriage[2] or for other reasons.

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[1] Paragraph 3.41.

4.4 Assuming a two-year course, the expected enrolment of 1,200 in the training colleges for national teachers would provide 600 teachers annually from 1967 onwards.[3] A further small inflow, which may be taken as an annual figure of 40, is assumed for married women returning to teaching and for Froebel trained teachers, giving a total inflow of 640 annually. Outflow through death, retirement and resignation is projected to average 520 annually, giving a net addition of 120 teachers annually. On that basis, the teaching force may be expected to increase as follows, the outflow being divided between trained and untrained roughly in the same proportions as the total stock:

TABLE 4.1

Projected Number of Teachers in National Schools (including Special Schools and Secondary Tops)

(excluding supernumerary teachers)[1]

Year	Total	Trained	Untrained
1960/61 (actual[2])	14,032	11,509	2,523
1965/66	14,500[3]	12,500	2,000
1970/71	15,100[3]	13,400	1,700
1975/76	15,700[3]	14,200	1,500

[1] 498 in 1960/61, mainly nuns, about a third of them being trained national teachers
[2] Annual Report 1960/61.
[3] The projected figures do not include possible additional numbers of teachers in secondary tops or in special schools who are not trained national teachers.

4.5 The total teaching force available for national schools, including special schools and secondary tops, is therefore expected to be 1,100 greater in 1970 than in 1960. It can be assumed, however, that about 200 of this increase will be required for special schools as the total enrolment in those schools is estimated to increase from some 2,200 in 1960 to 5,000 in 1970 and they have a specially low pupil/teacher ratio. In addition, it can be assumed that about 100 extra teachers will be required in secondary tops where enrolments are projected to increase by about 1,800 between 1960 and 1970, although not all of these teachers, or those for special schools, would come from the national teacher training colleges. It can be taken then that between 800 and 900 additional teachers will be available for national schools, excluding special schools and secondary tops, that is an increase of more than 5 per cent.

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[2] Women teachers are not now required to resign on marriage.
[3] At present the annual output is about 550. (Annual Reports.)

4.6 Since the projected enrolment for 1970/71 exceeds the corresponding 1960/61 enrolment by only about one per cent[4], it is clear that the supply of teachers will be more than adequate to maintain present standards of pupil/teacher ratio for some years ahead, unless there is a considerable increase in resignations. The number of teachers required depends not only on the total number of pupils but also on their geographical distribution, as the pupil/teacher ratio varies considerably between town and rural schools. The continued movement from rural to town areas, projected in chapter 2, is unlikely, however, to invalidate our conclusion.

4.7 The position is not so good, however, if other possible pupil/teacher ratios are considered. The Council of Education has recommended that no class should exceed 25 pupils in a one-teacher school, 30 pupils in a two-teacher school, 35 pupils in a three-teacher school or 40 pupils in the larger schools.[5] It would appear from the Second Programme for Economic Expansion[6] that while the attainment of this aim may be a matter of long-term policy, specific measures designed to achieve it by a target date are unlikely to be embarked upon within the period covered by this report and almost certainly not within the currency of the Second Programme. On the other hand we understand that it is the general policy of the Department to eliminate over-large classes. In 1964 measures were introduced designed to eliminate all classes of more than 50 pupils and it is expected that this will be accomplished by 1965/66. Presumably there will then be a gradual move towards reducing the number of classes with more than 40 pupils.

4.8 The number of teachers required to ensure that only a marginal number of pupils will be in classes of over a given size can be estimated with the aid of data on school size and class size, assuming no change in the organizational structure or in the teacher allocation quotas in the case of the small schools—the latter have lower pupil/teacher ratios at present than have the medium and large schools.[7] In order, for instance, that not more than 5 per cent of pupils be in classes of over 40, it can be conservatively estimated that in general the pupil/teacher ratio in any school should not exceed 35.[8] This would imply a pupil/teacher ratio for the whole country of slightly less than 30. On that basis the number of teachers required in 1970/71 would be just over 16,000, excluding special schools and secondary tops.

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[4] The projected enrolment (481,200, Table 3.1) for 1970/71 refers to February 1971. The corresponding figure for 1961 is not available. The 'average number on rolls' in 1960/61 was about 481,500 (derived from Annual Report) and the 'average number on rolls' in 1970/71 would not exceed 487,000, on the basis of comparing the two measures for 1963 and 1964.

[5] Report of the Council of Education on Primary Schools, page 208, paragraphs 318–9.

[6] Second Programme for Economic Expansion, chapter 8, paragraph 4, page 194.

[7] See Chapter 9 for details.

4.9 Since the number of teachers likely to be available for national schools[9] by 1970/71 will be just under 15,000 (paragraphs 4.4, 4.5) it seems clear that the targets proposed by the Council of Education cannot be achieved on existing strategies by 1970/71. It is indeed unlikely that teacher availability at any time during the seventies will enable this target to be attained without recourse to measures to increase the inflow of teachers, or changes in organization designed to make greater use of the available teaching force. In a later chapter these possibilities are examined and it will be suggested that with a fairly radical re-organization the target could be largely achieved.

4.10 Before leaving this question of teacher numbers it may be useful to comment on the age composition of national teachers. The only data available on this topic were obtained from the Census of Population. This information is summarized in Table 4.2. It will be seen that the teachers, especially the lay teachers, are very unevenly distributed among the various age groups, the number of lay teachers being particularly low in the age range 30 to 45. This would seem to be a consequence of the restriction on entry to the training colleges during the period 1935 to 1945. It appears that a period of relatively heavy retirals is beginning, which will continue up to the 1980's. In any discussion of possible changes in teacher training, this age pattern, leading as it does to variable replacement demand, would need to be borne in mind. For the future it is hoped that data on the age distribution of teachers will become available regularly in the Department of Education.

4.11 As regards national school buildings, the projection of the future situation is based on an existing programme. The targets of this programme are each year to replace[10] 100 school buildings with new buildings and to make major improvements on 50 others.[11] In

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[8] To allow, among other things, for uneven age distribution of pupils and for non-teaching principals in large schools.

[9] Excluding special schools and secondary tops.

[10] A few of the new buildings would not be replacement.

[11] 'In addition prefabricated structures will be provided where because of expected population changes a new school is required for only a limited number of years'. (Second Programme for Economic Expansion, page 196.)

TABLE 4.2

Age Distribution : Primary Teachers 1961. (*including Part-time Teachers*).

Age (in years) at 1961 Census		14–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65 and over	Total
Male ..	Lay ..	26	457	508	355	180	352	600	590	403	300	143	3,914
	Religious	6	101	131	81	74	65	69	60	37	20	19	663
Female ..	Lay ..	112	1,695	1,242	637	335	481	746	895	942	713	199	7,997
	Religious	—	283	313	275	341	341	303	290	264	254	348	3,012
	TOTAL ..	144	2,536	2,194	1,348	930	1,239	1,718	1,835	1,646	1,287	709	15,586
Year of reaching age of 65		2006–2010	2001–2005	1996–2000	1991–1995	1986–1990	1981–1985	1976–1980	1971–1975	1966–1970	1961–1965	—	—

Source: Census of Population, 1961.
Note: The total number of teachers serving in national schools during the school-year 1960/61 was 14,530 including supernumeraries. (Annual Report of the Department of Education, 1960/61.) The census figures would include teachers in non-aided primary and kindergarten schools.

March 1964, 1,005 school buildings had been declared obsolete. Building work was in progress in the case of 157 of these buildings and a decision had been taken to postpone the replacement of a further 186, owing to uncertainty as to the future needs for schools in certain areas and for other reasons. Consequently 662 school buildings, other than those where building work was already in progress, were due for replacement. In addition arrangements were being made for the erection of 20 new buildings, not replacement.

4.12 On the assumption that the number of schools being declared obsolete each year will remain constant at the present level of about 90, it is clear that the present programme of 100 new buildings a year almost all of which are replacements, will enable present standards to be maintained in as much as the number of obsolete buildings will not increase: in fact they are expected to decrease slightly.[12] It seems reasonable to assume also that the present programme will be able to cater for the small number of new schools likely to be needed. It may be noted that the total number of schools is not expected to increase. The reduction in the number of schools through closing down, and the net effect of amalgamations or separations of boys' and girls' schools, offsets the number of new (not replacement) schools built each year. It is estimated then that the number of national schools in operation in 1970/71 will still be about 4,800 (excluding special schools) as in 1963/64.

NON-AIDED PRIMARY SCHOOLS

4.13 The other first level division is non-aided primary schools. These schools employ many part-time teachers so that a simple series of teacher numbers, even were it available, might not be very helpful. On the basis of the data on teaching hours supplied in the school census of February, 1964, however, the number of full-time equivalent teachers was estimated at 876 (Table 1.1). These schools had 21,151 pupils on roll at that time, which gives an overall pupil/teacher ratio of 24. Were this pupil/teacher ratio to be maintained the number of full-time equivalent teachers in 1970/71 would be about 1,200, the projected number of pupils being 28,500 (Table 3.1). On the basis of the 1964 proportions of full-time and part-time teachers this would give a figure of 1,030 full-time and 640 part-time teachers in 1970/71. It will accordingly be assumed that this will be the number at which the schools will aim. We do not know from what sources these teachers are recruited nor do we know their retiral rates, as we did not ask the schools for this information. We do not, therefore, know the replacement demand nor do we know how far these schools will be competing with other schools in this respect. However, it is unlikely that this factor would materially affect the conclusions we have reached in the other parts of this chapter.

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[12] See Chapter 9 for details.

4.14 As regards the number of school places, the available information is again very limited. As part of a questionnaire[13] sent to such schools in 1963, some information was collected on the capacity of buildings. Information was obtained from 75 schools or about 40 per cent of the total number; in terms of pupils this accounted for 50 per cent of the total enrolment. The replies showed that, except in the smallest schools (less than 50 pupils), which accounted for only 5 per cent of all capacity, over 80 per cent of capacity was in use. Taking all the schools together the figure was 86 per cent. This is one of the highest rates of any type of school. Assuming that this pattern of use applies to all non-aided primary schools, it would seem that virtually all of the projected increase in pupil numbers will have to be accommodated in new schools or in extensions to existing schools; in practice it is extremely difficult to achieve anything like 100 per cent use of capacity. Even on the assumption that the 1963/64 enrolment of 21,000 represented 86 per cent of capacity and that 90 per cent of capacity would be utilised in future, there would still be a deficit of 6,000 pupil places by 1970/71 as the projected enrolment is 28,500. In the case of non-aided schools, however, the number of pupil places to be provided is not necessarily a reliable indicator of the amount of new buildings needed, since many schools establish themselves in existing buildings which they convert for school purposes. For the same reason the age distribution of the schools may not be a reliable indicator of replacement building needs. The cost of the extra accommodation will of course have to be met by the schools themselves: the cost is estimated in chapter 5.

SECOND LEVEL

SECONDARY SCHOOLS

4.15 There were 88,000 pupils and the equivalent of 5,149 full-time teachers in secondary schools in February, 1964 (Table 1.1). That gives a pupil/teacher ratio of 17.2. To maintain this ratio in 1970/71 for the projected enrolment of 114,000 pupils would require the equivalent of 6,628 full-time teachers, a net increase of 1,479.

4.16 We first estimate what the outflow is likely to be. No data on outflow in past years were available. We know[14] that between 1958/59 and 1962/63 there were a total of 1,326 new registrations while the number of registered teachers teaching full-time increased by only 619. That does not enable us, however, to deduce the number of full-time registered teachers who left that category in the interval. In estimating the future position available data on the age structure of the teaching force were used. The data on ages available from the Census of Population, 1961 (Appendix IV B, Table 12) do not of course distinguish between full time and part-time or between registered and unregistered teachers. Hence we also made an analysis of the ages on an approximate 80 per cent sample of full-time graduate teachers serving in 1961/62 (Appendix IV B, Table 1). Teachers had supplied this information to the Department and the questionnaires were made available to use for additional analyses. Taking these tables together, it seems reasonable to assume that departures on retirement, marriage etc. during the period 1963/64 to 1970/71 will be about 1,200 of whom about 800 would be full-time registered teachers

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[13] See Annexe E

[14] Annual Reports.

4.17 The inflow of teachers is closely related to the output of university graduates, since the number of non-graduate full-time teachers is small.[15] The maintenance of a satisfactory inflow to teaching will of course depend on the willingness of a sufficient number of graduates to adopt teaching as a career. The only data published on the inflow to secondary teaching in the past have been the number of teachers admitted to registration each year. Before registration a graduate is required to spend a year at the university to take a diploma in education and a further year teaching as a probationary teacher. The ratio of diploma students to arts graduates[16] in the previous year[17] and the ratio of new registrations to diploma students[18] two years previously, have both increased appreciably since 1952/3, although the increase has been erratic. Between 1952/53 and 1962/63 the number of registrations has grown from 165 to 287 : that is from 23 to 24 per cent of arts graduates three years previously and from 59 to 73 per cent of diploma students two years previously. Now we have projected that the number of full-time undergraduate students of the humanities in the National University (excluding Maynooth) will increase to 7,400 in 1970/71 (Table 3.5), compared with 3,163 in 1962/63. That is the source of the great majority of secondary teachers.[19] It is clear therefore, that without assuming any continuance of the tendency for those ratios to increase, the number of new registrations should reach at least 500 a year by 1970/71. The number of registrations during the eight years 1963/64 to 1970/71 may then be set conservatively at 3,000. Some of the new graduates will of course be required for other schools, at home or abroad, but in view of the proportion of graduates and diploma students who are not assumed to register as secondary teachers, it seems unlikely that these other demands would invalidate the general conclusion which we reach below.

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[15] In 1962/63 out of 4,334 full-time teachers, 310 of the unregistered teachers were not graduates (Annual Report). The number of registered full-time teachers who were not graduates was also small: mainly those with diplomas in Domestic Science etc.

[16], [18] Appendix, IV.B, Table 3

[17] Two-thirds of the dipioma students in 1961/2 had graduated in 1961. (Appendix IV.B, Table 8)

[19] Appendix IV B Table 3.

4.18 The net increase in the supply of teachers would thus be 1,800, which is greater than the increase required (1,479) to maintain the pupil/teacher ratio as it is at present (17.2), and this without assuming any inflow into part-time teaching. Of course we have only predicted the general supply of teachers. If secondary teachers in future were to be restricted in the subjects they are recognised to teach, shortages might well be expected in the case of particular subjects. The position for each category would then have to be examined. In the absence of such a requirement, however, there would appear to be no immediate likelihood of a shortage of secondary teachers. This is of course dependent on the correctness of our estimate of retirals and resignations. In view of its importance it is to be hoped that data on inflow and outflow will be organised on a regular basis in the Department in the future: the idea of individualized data would obviously be appropriate here.

4.19 **Secondary School Building.** The only data available on secondary school building in past years was the actual number of schools, which has risen steadily throughout the past three decades. No data were available on school capacity or on the extent to which additional capacity had been made available by existing schools during the period. We obtained some data relating to capacity, however, from a questionnaire which we sent to schools. The replies, accounting for 71 per cent of all schools and 70 per cent of all pupils, lead to the estimates for the total secondary division shown in the following table.

TABLE 4.3

Use of Capacity in Secondary Schools, 1961/62, by School-size.

School Size	Number of Schools[1]	Number of Classrooms[2]	(a) Pupil Places[3] ('000)	(b) Pupils Enrolled[4] ('000)	(b) as percentage of (a)
Pupils					%
Less than 100	209	1,015	24·8	13·6	55
100–149 ..	142	960	22·8	17·2	75
150–199 ..	75	705	16·8	13·2	79
200–299 ..	68	760	19·4	16·5	85
300 and over	48	810	22·7	19·9	88
TOTAL ..	542	4,250	106·5	80·4	75

[1] Annual Report.
[2], [3] Derived from data supplied by School Managers, covering 70 per cent of the schools and adjusted to cover all schools.
[4] Derived from the Department's List of Secondary Schools.

4.20 It will be seen from Table 4.3 that in aggregate 75 per cent of capacity was in use. Even if the 1961/62 capacity were to be fully used an additional 7,500 places would be required to cater for the projected enrolment of 114,000 in 1970/71. It is extremely doubtful, however, if a 100 per cent utilization could be achieved. It will also be noted that the spare capacity is very unevenly distributed over different sizes of school. The larger schools show an 88 per cent utilization: the majority of these are effectively full. Replies to other questions on the questionnaire regarding expected enrolments for the three years 1963/64 to 1965/66, indicate that 23 per cent of the schools expected no increase in enrolments with present capacity and 29 per cent had turned away candidates for admission. Since this 88 per cent utilization figure also accords with the data shown by non-aided primary schools, it might be more realistic to take say 90 per cent of capacity as being the maximum which is likely to be achieved in practice.

4.21 The next question is whether or not all schools, in particular the smaller schools, would in fact reach this figure. It will be seen that in the case of the smallest group—those with less than 100 pupils—only 55 per cent of places were utilised and that their pupil/classroom ratio was only 13 to 1. Clearly these schools have space for extra pupils. What is not clear is their likelihood of obtaining these pupils. This would depend, among other things, on the size of the school-going population in these areas, the proximity of other schools and the ability of small schools to provide adequate curricula and facilities. Some of these topics will be dealt with later in the report. In the absence of any precise indicators, it will be assumed that enrolments in these schools will grow at the same rate as total pupil enrolments, that is, an increase of 42 per cent by 1970/71 on the

1961/62 total. This would mean an increase in capacity utilization from 55 per cent to 78 per cent by 1970/71. If the schools with pupil enrolments from 100 up to 200 also grew at a rate equal to the general average, they would have exceeded the 90 per cent capacity figure before 1970, as of course would the larger schools. This suggests that additional buildings would be necessary.

4.22 To summarize the possible demand for pupil places, a 90 per cent utilization figure for four of the size categories shown in Table 4.3 and 78 per cent for the smallest schools would give a total of 93,000 places. There would thus be a deficit of 21,000 places by 1970/71. In addition to this expansion demand for places, there is also the question of buildings to replace old or unsuitable facilities. The only relevant data which we had were estimates of the ages of classrooms based on the returns to the questionnaire referred to above. The measure of obsoleteness used in regard to national school buildings is an age of 80 years. There were an estimated 951 classrooms 80 years of age or over in the secondary schools that replied to the questionnaire: those classrooms were located in 181 schools and represented an estimated 23,000 pupil places or 68 per cent of the total capacity in those 181 schools. The percentage distribution of all classrooms by age, based on these estimates, is shown in Table 4.4.

TABLE 4.4

Secondary Schools. Age of Classrooms by size of School, 1961/62

Based on returns from 70 per cent. of schools.

School Size	Age						
	0–39 years	40–79 years	80–99 years	100 and over	Not Known	Total of Percentages	Estimated Totals of Classrooms[1]
Pupils	Percentage of Classrooms in Age Group						
0–99 ..	49	14	14	19	4	100	1,015
100–149 ..	52	21	4	18	5	100	960
150–199 ..	42	16	9	31	2	100	705
200–299 ..	56	25	7	12	—	100	760
300 and over ..	56	11	4	29	—	100	810
TOTAL ..	51	18	8	21	2	100	4,250

Source: Questionnaires completed by School Managers.
[1] As in Table 4.3.

4.23 Assuming the sample to be representative, Table 4.4 shows 29 per cent of all classrooms as being 80 years of age or over.[20] The schools that would benefit from the new building grants, those of

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[20] Even if none of the non-responding schools had any classrooms of that age, the proportion would be 22 per cent

150 pupils or more, are shown to have about 700 such classrooms, which would represent about 18,000 pupil places.[21] If half of that number were to be replaced by 1970, in addition to the 21,000 extra places required by expansion, the total number of places required by 1970 would be 30,000. That is without allowing for replacement of rooms which would become 80 years of age in the interval, which would involve approximately 3,000 places. The smaller schools, which will not qualify for building grants unless they can reach an enrolment of 150, may be in difficulties as although their accommodation is under-utilized (Table 4.3), much of it is quite old (Table 4.4).

VOCATIONAL SCHOOLS

4.24 In the vocational division, unlike the secondary schools, specific qualifications are prescribed for each category of teacher. It is not sufficient, therefore, to project global requirements and availabilities, each category must be examined separately. A further complication is that the sources of supply vary. Thus some categories are recruited from university graduates; others are trained by the Department; yet others are recruited, especially for technical posts, from professional and technical personnel and from tradesmen. Graduates are not required to hold the higher diploma in education, but ancillary qualifications (in Irish, teaching methods, shorthand and typewriting) are required for some categories. Finally, major changes are projected in vocational school courses. The introduction of a third year day continuation course and of a technical leaving certificate course, the expansion of apprentice and technical education, all presage curricular changes which may have repercussions on the composition of the teaching force. For these reasons teacher requirements will be considered before availabilities.

4.25 The number of vocational teachers on 31st August, 1963, is given in Table 4.5.

TABLE 4.5

Vocational Teachers whole-time and part-time, 31 August, 1963

Category of Teacher	Whole-Time	Part-time
Woodwork and Building	390	105
Art	42	50
Science and Mathematics	77	137
Irish and Continuation Subjects	280	163
Metalwork and Engineering	233	185
Domestic Science	291	150
Commerce	264	330
Rural Science	139	22
Other teachers	110	754
TOTALS ..	1,826	1,896

Source: Annual Report, 1962/63.

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[21] Using Table 4.3.

4.26 Virtually all whole-time vocational teachers give instruction to whole-time day students, continuation or technical. The Annual Report for 1962/63 shows 29,689 whole-time students enrolled (28,132 continuation, 1,557 technical); the student/whole-time teacher ratio therefore was 16.3. To maintain this ratio in 1970/71 for the projected enrolment of 43,000 (Table 3.1) would require 2,640 whole-time teachers. Such an aggregate projection is not sufficient, however, as we have pointed out. Moreover the changes in courses and curricula already mentioned, together with possible changes in part-time technical education, particularly for apprentices, make a more detailed projection necessary.

4.27 Since individual teachers spread their teaching hours over several courses and because of the widespread employment of part-time teachers, it is not possible to say definitively how many teachers are engaged on each course. It was necessary instead to examine the distribution of teaching hours and to translate these hours into notional full-time equivalent teachers. On that basis the teaching force for 1962/63 was estimated to be equivalent to 2,131 full-time teachers.[22] The distribution of all teaching hours, including part-time, by type of course was calculated to be as shown in Table 4.6. The distribution of these teaching hours by category of teacher is given in Table 4.7.

TABLE 4.6

Vocational Schools: Distribution of Teaching Hours by Type of Course, 1962/63

Total Teaching Hours	Percentage Distribution of Teaching Hours						
	Day Courses					Evening Courses	Community Services[2]
	Continuation	Whole-time Technical	Apprentice	Part-time Technical	Other		
1,876,000[1]	69·6	4·6	4·2	2·5	2·4	13·9	2·8

Source: Information supplied by Vocational Education Committees.

[1] Owing to slight differences in the counting of hours e.g. we did not include sick-leave, this figure is a little smaller than the total in the annual report for 1962/63.

[2] Some vocational teachers undertake extra-mural activities which are accepted as pertaining to their posts e.g. supervising rural building projects, organising Macra na Tuaithe Clubs (junior sections of Young Farmers Clubs) etc.

4.28 Assuming, for the want of reliable indicators, that teaching hours for each course increase in direct proportion to the projected increase in the number of students on the course in 1970/71 over

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[22] Appendix IV.C, Table 4.

TABLE 4.7.

Percentage Distribution of Teaching Time on Each Type of Course by Category of Teacher, 1962-63

Type of Course	Percentage Distribution of Teaching Time by Category of Teacher[1]											
	Woodwork and Building	Art	Science and Mathematics	Irish and Continuation	Metalwork and Engineering	Domestic Science	Commerce	Rural Science	Other	Part-time Teachers	Total of Percentages	Total Teaching Hours (in thousands)
Day Courses:												
Continuation ..	18·7	1·6	2·9	14·4	10·5	15·2	16·0	8·4	1·0	11·3	100	1,290
Full-time Technical	2·0	4·0	12·5	4·4	10·8	15·9	20·0	—	14·9	15·4	100	92
Apprentices ..	7·4	0·2	3·4	1·8	30·7	1·7	1·3	0·3	23·4	29·7	100	91
Part-time Technical	2·2	0·1	2·2	0·3	5·0	1·3	0·8	0·4	39·2	48·5	100	45
Other Day Courses	11·6	1·1	0·2	10·0	0·8	37·5	1·9	3·4	1·9	31·7	100	36
Evening Courses ..	20·3	1·9	1·2	3·8	8·1	11·1	6·7	1·5	10·1	35·3	100	273
Community Services	60·9	0·7	—	7·1	2·3	6·0	0·9	16·2	5·9	—	100	49
TOTAL ..	18·2	1·6	3·0	11·1	10·6	13·8	13·1	6·5	5·2	16·9	100	1,876

Source: Information supplied by vocational education committees.

[1] This table does not give the proportions of the total time spent on the various subjects; it gives the proportion of the total teaching time given by each category of teacher.

1962/63 and that there is no change in average annual teaching hours per teacher, the number of full-time equivalent teachers required in 1970/71 has been calculated to be 2,982 as described in the appendix. The distribution of this total by category depends on the curricular arrangements for the proposed three-year continuation and technical leaving certificate courses At the time these projections were being prepared, the Department of Education was not in a position to give any firm indications of the curricula it proposed to introduce. It was indicated, however, that for the purpose of our projections, the proportion of teaching time given by teachers of science and mathematics, metalwork and engineering and art would increase and reductions would result in the proportions for teachers of woodwork and building domestic science and commerce. It is not to be inferred that the time allocated to such subjects as domestic science or woodwork will necessarily be reduced; while there will presumably be some timetable modifications made, the major assumption is that by 1970 certain subjects will be taught to a greater extent than at present by teachers with the appropriate specialist qualifications

4.29 The allocation of the 2,982 equivalent full-time teachers estimated to be required in 1970/71 by category and by whole time and part-time is shown in Table 4.8. The part-time total was allocated among the categories in broadly the same proportions as in 1962/63. Additional material on the derivation of these figures will be found in Appendix IV.C.

TABLE 4.8

Projected Requirements of Vocational Teachers, 1970/71

Category of Teacher	Whole-time	Part-time
Woodwork and Building	394	115
Art	77	54
Science and Mathematics	314	152
Irish and Continuation Subjects	374	202
Metalwork and Engineering	360	204
Domestic Science	293	166
Commerce	292	368
Rural Science	180	23
Other Teachers	276	846
TOTALS . .	2,560	2,130

4.30 The next step is to examine the outflows and the inflows during the years to 1970/71 in order to determine the number of teachers likely to be available. Detailed analyses of inflows and outflows in recent years were made from the annual statistics supplied by the vocational education committees. Details will be found in the appendix. Information was also collected on the sex and age distribution of the teaching force from Departmental records and is shown in Table 4.9. It relates to whole-time teachers actually serving

TABLE 4.9

Age Distribution of Whole-time Vocational Teachers, October 1964

Age on 31 August, 1964	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65 and over	Total
Male	102	256	259	157	128	141	134	101	74	11	1,363
Female	125	144	87	45	49	46	54	50	27	1	628
TOTAL	227	400	346	202	177	187	188	151	101	12	1,991
Year of Reaching Age of 65 ..	2005–09	2000–04	1995–99	1990–94	1985–89	1980–84	1975–79	1970–74	1965–69	1961–65	—

Source: Department of Education records.

in October, 1964, and does not represent the entire number of teachers for the session 1964/65. Tables giving each category of teacher by age and sex are given in the appendix. It was not possible for practical reasons to get these data as of 1962/63 to accord with the date of earlier tables. Inflows were considered in two sections, teachers likely to be trained by the Department on its present teacher training programme and teachers who must be recruited from other sources, such as the universities. For the second group we relied on the trends indicated by the general inflow/outflow data already mentioned. The projected outflows and inflows from 1963 to 1970 are shown in Table 4.10.

4.31 By comparing the total inflows and outflows we get an estimate of the number of whole-time teachers likely to be available in 1970/71 as shown in the following table.

TABLE 4.10

Whole-time Vocational Teachers—Projected Inflows and Outflows 1963/70 *and Projected Stock* 1970/71

Category of Teacher	Stock on 31 August, 1963[1]	Projected Inflows 1963/70	Projected Outflows 1963/70	Projected Stock on 31 August, 1971
Woodwork and Building	390	135[2]	55	470
Art	42	35	17	60
Science and Mathematics.	77	140	67	150
Irish and Continuation Subjects.	280	160	140	300
Metalwork and Engineering.	233	180[2]	53	360
Domestic Science ..	291	320[2]	241	370
Commerce	264	215	154	325
Rural Science	139	150	99	190
Other Teachers ..	110	255	80	285
TOTAL ..	1,826	1,590	906	2,510

[1] Annual Report 1962/63.

[2] Assuming maximum inflow to training is maintained.

4.32 A comparison with the first column of figures in Table 4.8 shows that on this basis there would be deficits in art (17), science (164) and Irish and continuation subjects (74), and apparent surpluses in woodwork, domestic science and commerce. This implies that the distribution of teaching time by category of teacher as envisaged in our projections will not be achieved by 1970 on present strategies and with the present pupil/teacher ratios. In particular the proportion of teaching time to be given by teachers of science and mathematics would not be achieved. The stock as projected in Table 4.10 would correspond to a distribution of teaching time which would show a much smaller increase in the proportion of time given by teachers of science and mathematics. There may as a result be some expansion in the number of part-time teachers beyond the requirement of 2,130 shown in Table 4.8 : accordingly we assume 2,300 part-time teachers in 1970/71. On the 1963 proportions they would be equivalent to 460 full-time teachers. This with the projected stock of whole-time teachers in Table 4.10 would give almost the required total of 2,982 full-time equivalent teachers (Paragraph 4.28).

4.33 **Vocational School Building.** As already indicated, by 1970/71 accommodation will be required for 43,000 whole-time students, 38,000 continuation, 3,000 technical leaving certificate and 2,000 whole-time technical. The position in regard to the continuation course on 1st February 1964 is set out in the following table.

TABLE 4.11

Capacity Utilisation in Day Vocational Schools (Continuation Courses only) 1963/64

Size of School	Number of Schools[1]	Number of Rooms[2]	Estimated Number of Pupil Places[2]	Number of Students[1]	Capacity Utilisation (per cent)
0–99 pupils	119	492	9,055	7,081	78
100–149 „	60	387	7,570	7,148	94
150–199 „	26	217	4,431	4,333	98
200–299 „	32	416	8,562	7,816	91
300 pupils and over	8	154	2,882	2,591	90
TOTALS ..	245	1,666	32,500	28,969	89

[1] As of February, 1964.
[2] Data supplied to the team by the Department and the vocational education committees.

These utilisation rates are all rather high. In fact the total enrolment for 1963/64 was 30,671[23] which represents 94 per cent of capacity.[24] The schools are effectively full; in many cases supplemental accommodation is being rented; this means that by 1970/71 extra places will be needed for all of the extra 10,000 students (including 2,000 of the technical leaving certificate students, for whom it is expected courses will be provided in the larger schools). Information on school building plans was obtained from the vocational education committees and is given in Table 4.12. If present plans come to maturity, 1,045 new rooms will be provided and 226 existing rooms replaced by 1975/76. By 1966 there should be 38,500 places available, an increase of 6,000 places, and by 1971, 49,000 places, an increase of 16,500 places compared with 1963/64. On a 90 per cent utilisation rate this would cater for 44,000 students. As the projected enrolment is 40,000 it would seem at first sight as if there would be some spare capacity if all building plans are brought to fruition. However, not all the additional capacity will be available for continuation courses, as Table 4.12 includes places relating to centres used only for technical and evening courses. In addition, we have aggregated continuation and post-continuation students which would understate the capacity needed. There is further the fact that concurrently with the expansion in whole-time students, the same buildings must accommodate increased numbers of part-time day students, particularly apprentices.

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[23] Annual Report 1963/4 prior to publication.
[24] The breakdown by size of school was available only for February, 1964.

TABLE 4.12

Vocational Schools—Plans for New and Replacement Building 1964 *to* 1975

1963/64			Plans for 1964–1975						
			Replacements		Extensions		New Schools		
School Size (Rooms)	Number of Schools[1]	Number of Rooms	Schools	Rooms	Schools	Extra Rooms	Schools	Rooms	Total Extra Rooms
1–3	77	170	15	37	39	74	8	18	92
4–6	117	584	13	65	70	163	52	242	405
7–10	57	465	5	39	35	142	12	95	237
Over 10	38	505	6	85	20	106	12	205	311
TOTAL	289	1,724	39	228	164	485	84	560	1,045

Source: Vocational education committee returns.

[1] Excluding the colleges of technology, commerce, catering and music in Dublin and the schools of art and music in Cork and Limerick.

Note: This table is not comparable with Table 4.11 as to numbers of schools or rooms. This table covers all schools listed by Chief Executive Officers including some used only for evening classes or for technical education. Table 4.11 refers only to schools in which whole-time day continuation courses were operating on 1st February, 1964.

4.34 It was noted from the returns to the questionnaire that there was a certain amount of overcrowding in schools in 1963/64 and that in addition over 1,100 applicants were refused admission to continuation courses, about 700 of them in Dublin. The above details would suggest that if building projects envisaged are pressed forward as planned it should be possible to overtake the projected demand before 1970.

4.35 In view of the importance of workshops and other special rooms we compiled the information in Table 4.13 showing the building plans in regard to these special rooms.

4.36 Making provision for the projected increase in technical education is almost entirely a matter of providing new accommodation. Regional technical colleges are being built or are planned in Dublin, Cork, Limerick, Waterford, Carlow, Galway, Sligo, Dundalk and Athlone. These should provide accommodation for around 4,500 students including the projected increase of 500 whole-time technical students and 1,000 technical leaving certificate students. They will also, of course, be used extensively by part-time students, including apprentices. It is likely also that some existing accommodation for continuation and technical classes, which will be freed by the realisation of the new building proposals, will be converted for apprentice classes. It will be assumed, however, that a further 500 places for apprentices will be needed by 1971.

COMPREHENSIVE SCHOOLS

4.37 The projections for the comprehensive schools in chapter 3 are based on present indications of building plans, which would be financed entirely from public funds. Pupil/teacher ratios in line with those in secondary and vocational schools would give a requirement of about 150 additional whole-time teachers for the additional 2,500 pupils. This requirement would be met without affecting our conclusions as to the supply for other schools.

OTHER SECOND LEVEL

4.38 The remaining areas of second level education may be dealt with briefly. No data on past years are available for non-aided commercial schools, or for non-aided secondary and religious schools. The pupil increase for all these schools was projected as less than 500 by 1971, so that additional teachers would probably number less than 30. No estimates of capacity can be made as the extent or nature of the existing facilities is not known.

4.39 Of the remaining state-aided establishments, the most important are agricultural schools and colleges, and residential schools of domestic economy. The Department of Agriculture has informed us that 94 new places will be provided and 52 replaced and that an additional 30 teachers will be required. It is expected that capacity will be sufficient with this increase to cope with the projected increase in enrolments.

THIRD LEVEL

4.40 It is not proposed in this report to discuss at any length problems of staff or building requirements in the universities. Needs may vary considerably as between courses; hence simple global

TABLE 4.13

Vocational Schools: Inventory of Special Rooms, 1964–76

Description of Room	1964		Number of rooms to be replaced by			Number of extra rooms to be provided by		
	Total number	Total number obsolete, etc.	1964/1966	1966/1971	1971/1976	1966	1971	1976
Woodwork	265	24	9	18	7	34	71	9
Metalwork and Engineering	167	19	3	10	3	69	81	18
Science	118	11	2	7	1	39	63	10
Domestic Science	273	21	7	19	7	32	58	8
Art	43	4	—	3	—	14	39	7
Commercial	53	8	1	3	—	8	10	2
Assembly Hall	23	3	—	2	—	9	25	5
Library	25	2	—	2	—	2	18	—
Other	54	10	—	9	—	13	22	—

Source: Data supplied by vocational education committees.

figures such as staff/student ratios are inadequate as indicators. However, in the absence of detailed data it has been necessary to use them.

4.41 During the decade 1951/52 to 1961/62, the number of university staff[25] grew by 58 per cent from 585 to 926.[26] For the same period full-time student numbers[27] had risen by almost 55 per cent[28] so that the full-time student/staff ratio showed little change during that decade. For the period 1961/62 to 1970/71 full-time student enrolments[29] are projected to rise by 70 per cent, so that, were this position to be maintained, an increase of 70 per cent in staff numbers would be indicated. Whether the position is in fact maintained is ultimately a question of university policy, but for our purposes it will suffice to consider the feasibility of maintaining it as indicated above. One factor which will affect the position is the distribution of students among various types of course. It is not proposed to discuss this in detail, but there might appear to be less scope for allowing ratios to increase in subjects involving laboratory or clinical work.

4.42 An examination of the data does not appear to offer any conclusive evidence for or against the feasibility of keeping the student/staff ratio constant. During the decade under review, 1951 to 1961, student numbers[30] in medicine, engineering and architecture —subjects which might be taken to need lower student/staff ratios— remained relatively constant, while the number of students in the humanities rose from 3,000 to 5,000. On the other hand, the number in science subjects rose from 600 to 1,600.[31] Hence, it is difficult to say how the stability in the student/staff ratio was affected by changes in the relative demand for various subjects. For the forecast period the proportion of arts students is expected to increase, which might suggest that the overall student/staff ratio might increase somewhat. Against this it might be contended that the student/staff ratio is already high and that the need is to reduce it rather than allow it to increase, having regard especially to the increasing importance of tutorial work. Pending the report of the Commission on Higher Education the reasonable course may be to assume that staff numbers will rise at the same rate as student numbers for the forecast period, giving a 70 per cent increase by 1970/71, compared with 1961/62.

4.43 It is difficult to say whether or not the necessary staff would be obtainable. The sources of university staff are almost invariably the universities themselves. The increase in graduate numbers—or more particularly post-graduate—would indicate that the potential supply of staff was also rising. From this viewpoint there would be little need to question the adequacy of the supply. The problem arises when the viewpoint is widened to take account of the demand on the supply from sources other than universities. It may suffice to note that the question is mainly one of relative salaries and similar perquisites, hence it may be assumed that if these are comparable with those obtainable elsewhere, then universities should be in a position to obtain any necessary staff.

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[25], [27], [29], [30] Excluding Maynooth and College of Surgeons.
[26] Statistical Abstracts.
[28], [31] Data supplied by secretariat of the Commission on Higher Education.

4.44 This leaves the question of university buildings for consideration. Data on capacity are not available, and again because of the variety of courses, it would be difficult to attach any precise meaning to the concept in global terms. We shall confine the discussion to the constituent colleges of the National University, as the numbers in Trinity College, Maynooth and the College of Surgeons are expected to remain constant.

4.45 In the case of the colleges of the National University, it may be taken that they will be expected to cater for about 7,000 extra full-time students by 1970/71 compared with 1961/62. Their capacity at the earlier date may be taken as fully utilised, indeed overcrowded, so that the full 7,000 places would be needed. Work has already begun on a new university college in Dublin, while new buildings have either been sanctioned or are already under construction in Cork and Galway. The Commission on the accommodation needs of the constituent colleges of the National University of Ireland which reported in June 1958, accepted the total accommodation needs as stated by the Dublin college at 610,000 square feet which contained an allowance for expansion of 20 per cent. In 1957/58, however there were already 3,566 full-time students[32] in University College, Dublin : the number in 1961/62 was 4,762 or an increase of over 30 per cent. In 1962 the Dublin College expected that the number of students in 1970/71 would be slightly in excess of 8,000. On the basis of the existing ratio of the numbers in University College, Dublin to the total numbers in the National University and given the present number of institutions, we believe that the University College, Dublin estimate for 1970/71 may be on the low side. If as projected the total National University enrolment reaches 14,600 by 1970 the numbers in University College, Dublin on the basis indicated should reach almost 10,000. In Dublin, the college as presently planned might meet accommodation needs until about 1970. It seems clear, however, that additional accommodation will be required to meet subsequent needs. By 1975/76 we estimate that the number of full-time students in the National University will have risen to about 17,500, of which about 12,000 would be in the Dublin college. In the case of Cork, it is understood that present schemes should meet needs on the scientific side, but that there may be additional demands on the arts side in a few year's time; in Galway arts accommodation should be reasonably satisfactory but a need for further accommodation for science will probably arise.

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[32] Data supplied by secretariat of the Commission on Higher Education.

4.46 Other third level areas may be dealt with briefly. In the vocational division, the accommodation and teacher needs for technological courses (paragraph 4.36) were covered in the discussion of second level education. In the case of national teacher training, work is already in progress to rebuild one of the colleges and simultaneously increase capacity from 1,100 to 1,200 places. The number of extra training college staff needed to cope with such an increase is relatively small. Finally for other third level areas such as the College of Art and Colleges of Pharmacy and Dentistry,[33] an increase of 200 pupil places and 20 staff will be assumed. It is assumed, however, that the National College of Art will be rebuilt.

4.47 The foregoing projections are summarised in Table 4.14 which shows the anticipated additional resources of teachers and buildings by 1970/71 compared with 1962/63.

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[33] Students in this college are registered university students and have been counted under 'university' in Tables 1.1 and 3.1.

TABLE 4.14

Summary of Resources, 1964–71

(*a*) TEACHERS[1]

Type of School or College	1964 Stock	Projected 1971 Stock	Percentage change over 1964	Gross Inflow 1964–71
FIRST LEVEL:				
National Schools[2]	14,295	15,100	+ 5·6	4,300
Non-aided Primary ..	876	1,200	+37·0	n.a.
SECOND LEVEL:				
Secondary Schools	5,149	6,628	+28·7	3,500
Vocational (Continuation) Vocational (Technical)	2,236	2,982	+33·4	1,590[3]
Comprehensive	—	150	...	n.a.
Other aided	111	141	+27·0	n.a.
Non-aided commercial ..	114	250	+82·5	n.a.
Other non-aided	23			
THIRD LEVEL:				
Universities[4]	1,043	1,570	+50·5	n.a.
Teacher Training Colleges	119	125	+ 5·0	n.a.
Other Third Level	30	50	+66·7	n.a.
Non-aided Religious ..	n.a.	n.a.	n.a.	n.a.

...=not applicable n.a.=not available .

[1] In terms of full-time equivalent teachers.
[2] Including special schools and secondary tops. Excluding supernumeraries.
[3] Wholetime flow only.
[4] Wholetime and part-time aggregated.

(*b*) PUPIL PLACES

Type of School or College	1964 Stock	Projected 1971 Stock	Percentage change over 1964	Gross Inflow 1964–71
FIRST LEVEL:				
National Schools[1] .. .	4,800	4,800	—	700 new buildings 350 major improvements
Special Schools	2,600	5,500	+92·3	n.a.
Non-aided Primary ..	25,000	31,000	+24·0	6,000[2]
SECOND LEVEL:				
Secondary Schools	106,500[3]	127,500	+19·7	30,000
Vocational (Continuation) ..	32,500	49,000	+38·5	52,000
Vocational (Technical) ..	1,500	6,500	+333·3	5,500
Comprehensive	—	2,500	...	2,500
Other aided	1,600	1,700	+ 6·3	146
Non-aided commercial ..	n.a.	n.a.	n.a.	n.a.
Other non-aided	n.a.	n.a.	n.a.	n.a.
THIRD LEVEL:				
Universities	13,200	17,600	+33·3	8,000
Teacher Training Colleges	1,600	1,700	+ 6·3	350
Other Third Level	1,000	1,200	+20·0	350
Non-aided Religious ..	n.a.	n.a.	n.a.	n.a.

...=not applicable n.a.=not available

[1] Figures refer to schools, not pupil places. Including secondary tops.
[2] New building only: no allowance made for replacement building.
[3] 1961–62 data.

CHAPTER FIVE

Cost Projections

5.1 With projections of future resource requirements and supply derived in the preceding chapter, we now proceed to estimate the costs and financial flows which result. This of necessity is a rather complicated area and there is a number of considerations to be borne in mind. Firstly, it is desirable to identify, if possible, the cost or value of the resources used in making education available. Secondly, the financial flows which arise as a result of educational activities must be identified. Divergences may arise between these two measures for a variety of reasons, for example, if one is interested in the value of the resources used in education it may be appropriate to impute a value for the services of unpaid teachers. If, however, one is interested simply in financial flows, then no data would appear in respect of such teachers. Similarly, to take a contrasting example, the granting of a state scholarship to a pupil will result in a financial flow, although no real resources are involved in such a transfer. While an attempt will be made in this chapter to distinguish real resource use from financial transactions the major emphasis is on these latter and all questions relating to unpaid teachers etc. are dealt with in the appropriate Appendix.[1] The Appendix also discusses the basis of estimation and treatment for various items; and in addition contains some historical data.

FIRST LEVEL

NATIONAL SCHOOLS (INCLUDING SPECIAL SCHOOLS AND SECONDARY TOPS)

5.2 As the major part of the costs is met from state funds, it is possible to obtain a reasonably complete financial picture for national schools. Data on payments made by the State were available in some detail, but information on expenditures borne by the schools, whether in total or in detail, was virtually non-existant, while no information was available on expenditure by parents.

5.3 The most convenient way of presenting the financial data may be to show separately for each item the amounts borne by each group in relation to the total expenditure. Accordingly, Table 5.1 is presented showing the estimated expenditure for the year 1961/62.

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[1] Appendix V.

TABLE 5.1

Estimated Expenditure on National School Education 1961/2 by Source and Type of Expenditure

(£'000)

Source Type of Expenditure	Public Funds	Schools	Parents	Total
CURRENT:				
Teachers' Salaries	9,621·0	—	—	9,621·0
Heating, Cleaning, Painting, Etc.	135·8	260·0	—	395·8
Transport Services	31·8	—	20·0	51·8
School Books, etc.	7·9	20·0	300·0	327·9
Teachers' Superannuation	1,232·0	—	—	1,232·0
Other	15·4	—	—	15·4
TOTAL CURRENT ..	11,043·9	280·0	320·0	11,643·9
CAPITAL:				
New Buildings, Equipment ..	1,712·6	285·0	—	1,997·6
Debt Service (T)[1]	380·0	30·0	—	410·0
GRAND TOTAL ..	13,136·5	595·0	320·0	14,051·5

Source: For expenditure from Public Funds, the Annual Appropriation Accounts For other expenditures, enquiries and estimates made by us.

[1] Cf. par. 5.4.

It will be noted from this table that national school teachers' salaries are paid directly by the State to teachers and no payments are made by the schools. In the case of heating, cleaning and similar maintenance, the initiative and payment for the expenditure involved for such services rest with the schools, but grants towards the cost of these items are made from state funds. Expenditure has been allocated to show the net amount borne (i) by the State and (ii) by the schools. Transport services refer to arrangements for bringing outlying children to and from school. The organisation of such arrangements is undertaken by the schools and grants are made by the State towards their cost. School requisites refers to expenditure on books and classroom materials. The schools are responsible for materials used by the teachers; parents normally pay for books and other items used by the pupils; the small expenditure shown for the State under this heading refers to the provision made for necessitous children. Grants under this scheme are paid to the schools, which supply the materials to the children. The final current item, teachers' superannuation, is self-explanatory, and is financed entirely from state funds. (See also Appendix V).

5.4 Of the capital items the first relates to the cost of new buildings and equipment and of major extensions and improvements to existing schools. As before, state grants are made to cover part, in this case the bulk, of the costs involved. The remaining item is intended to refer to the financial transactions which arise from this building programme. As such capital expenditure is largely financed by state borrowing, interest payments have subsequently to be made as the table shows. The letter 'T' in the table indicates that such interest payments are a transfer item (i.e. they do not involve the use of any real resources).

5.5 The components of state spending in Table 5.1 were, with one exception, taken from official data and may be considered highly accurate. The exception was the last item—debt service, which was estimated because the available data on the public debt do not disclose the amount of interest payments attributable to any particular activity.

5.6 Some indication of part of the expenditure by schools was obtained from official data. An estimate of total expenditure, and of its constituent parts, was made from data collected from a sample of schools.[2] The figures so obtained are higher than official estimates because they contain some expenses e.g. legal fees in the case of capital expenditure, which are excluded from official estimates. Expenditure by parents, where no data were available, was estimated on the basis of 12/6 per child per annum for books, and an allowance of 40 per cent of the total spending in the case of transport services.

5.7 With this table as a basis, the projection of future costs and financial flows may now be considered, beginning with teachers' salaries. Expenditure on this item might grow for three reasons; the number of teachers might increase; the salary scales of teachers might be raised; and there might be a change in the composition of the teaching force, so that it contained a larger number of more highly paid teachers. Teacher numbers have been discussed earlier (Chapter 4) and an 8 per cent increase by 1970/71 and 12 per cent by 1975/6 on the 1960/1 figure were assumed. The composition of the teaching force will not be considered in detail, but one factor which will alter its composition (and subsequent cost) is the fall in the number of untrained (lower paid) teachers, estimated to fall from 2,500 in 1960/61 to 1,700 in 1970/71 and 1,500 in 1975/6. This would increase costs; by 1970/71 the increase might be of the order of £30,000 annually. On the other hand, the retirement of older teachers, which is expected to be fairly heavy, and the increase in the inflow of young teachers, may reduce somewhat the average annual salary. In making projections of salary increases for 1970/71, it has been assumed that these will rise at an annual rate of 3.5 per cent in line with the projected rise in average productivity postulated by the Second Programme for Economic Expansion. The Programme expects an annual growth rate in gross national product of about 4.1 per cent for the decade 1961/70. Of this total growth rate, approximately 3.5 per cent is expected to be obtained from increased productivity ; this, therefore is the amount in real terms by which wages and salaries could, on average, rise throughout the period. Applying this 3.5 per cent rate for the nine year period 1961/70 gives an increase of about 36 per cent. This percentage has been used in constructing forward projections. While the actual increases in money terms may be greater, as a result of price movements, teachers' salaries in real terms can only rise at a faster rate by a redistribution of income from some other sector of the economy.

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[2] Appendix V.

5.8 In the case of the second item, maintenance of schools, expenditure on one component, painting, is projected to rise. This expenditure had hitherto been borne by schools. Since 1962/63, however, state grants have been introduced, and consequently it is assumed that in future buildings will be painted more often. The cost of these maintenance services is also expected to rise. In the absence of more precise indicators, wage rates are expected to rise by 3.5 per cent annually and productivity by 2.3 per cent, which is the rate projected for the service sector as a whole in the Second Programme for Economic Expansion. This would imply an annual increase of 1.2 per cent in the cost of school maintenance services or 11.3 per cent by 1970/71; the addition of this percentage to the estimated extension in painting programmes produces the total shown in Table 5.2. No further extension of present transport services is

TABLE 5.2

Projected Expenditure on National School Education 1970/71

(£'000)

Source Type of Expenditure	Public Funds	Schools	Parents	Total
CURRENT:				
Teachers' Salaries	14,170	—	—	14,170
Heating, Cleaning, etc. ..	250	280	—	530
Transport Services	35	—	25	60
School Books, etc.	50	20	300	370
Teachers' Superannuation ..	1,850	—	—	1,850
Other	20	—	—	20
TOTAL CURRENT ..	16,375	300	325	17,000
CAPITAL:				
New Buildings, Equipment ..	2,150	350	—	2,500
Debt Service (T)	600	50	—	650
GRAND TOTAL ..	19,125	700	325	20,150

assumed, but the same allowance of 11.3 per cent for increases in costs is made so that expenditure on this item would rise by much the same percentage. State grants for equipping school libraries have been introduced in the current year (1964) and it is assumed that expenditure will continue at a somewhat similar level (around £50,000 annually) for the forecast period. No change is assumed in expenditure on other school requisites.

5.9 The next item in the table, expenditure on teachers' pensions, is subject to somewhat similar trends as salaries. Expenditure is a function of the number of retired teachers and of the rate of pension to which they are entitled. Pension rates are projected to rise in line with salary rates. Numbers of retired teachers are also estimated to increase; the number due to retire up to 1975 is expected to be slightly higher than in the past decade and the life expectancy of older people has been rising in recent years. It is assumed, therefore, that the number of retired teachers will be approximately 10 per cent greater in 1970/71 than in 1961/62. In the final, residual item of current spending a 30 per cent increase has been assumed.

5.10 In the case of capital items, expenditure on new schools and extensions to existing schools has risen in recent years, partly because of higher building costs and partly as a result of an increase in the number of schools built. The policy at present is to build 100 schools annually and the 1964/65 Estimates of State Expenditure are based on this figure. It is assumed that the number of grants for extensions will on average be the same as that of recent years. Unless, therefore, some change occurs in building costs there would be little variation in annual expenditure during the forecast period compared with 1964/65. In the building industry in recent years, prices have risen more rapidly than for the economy as a whole. It is doubtful, therefore, whether costs will remain constant. It is known, however, that the Department of Education is experimenting with prefabricated buildings and also with a type of design termed ' modular ', which results in speedier construction of buildings. These developments, if widely adopted should lead to some relative reduction in school building costs. In the absence of any more specific data or trends, therefore, it will be assumed that the unit cost of schools expressed in constant prices will remain unchanged over the period 1961/62 to 1970/71. Table 5.2 shows an increase in expenditure over the 1961/62 figure, however, reflecting a rise in the volume of building operations undertaken.

5.11 Expenditure for capital purposes by the schools themselves is projected to rise at the same rate as state expenditure. In calculating interest payments on borrowed moneys it is assumed that debts have an average life of eight years, so that interest payments in 1970/71 would relate to all capital spending during the preceding eight years. It is also assumed that the average interest rate is 4 per cent. It is assumed that half of the expenditure financed by the schools themselves for capital purposes will be met by borrowing. These estimates also include expenditure on special schools, reformatory and industrial schools and secondary tops. Hence the other first level division calling for consideration are the non-aided primary schools.

NON-AIDED PRIMARY

5.12 No historical data were available in the Department of Education on the financial aspects of non-aided primary schools. Accordingly, as part of a more detailed questionnaire addressed to such schools, information was sought from them by us as to their income and expenditure pattern for the year 1961/62. Replies were received which covered about 40 per cent of the schools and 50 per cent of the pupils. These schools are in many cases part of establishments which also operate secondary schools and have no separate accounts of expenditure for their primary school departments. The total expenditure may, therefore, be thought of as being composed of two elements, income from parents by way of fees and expenditure of, and by, the schools themselves.

5.13 Expenditure by parents, which forms the income side of school accounts, is indicated in part by the following table, which shows the percentage of day pupils who paid the fees indicated.

TABLE 5.3

Non-Aided Primary Schools: Percentage Distribution of Day Pupils by Fee, 1961/62

(Based on returns accounting for 50 per cent. of pupils)

Fee	Percentage of Day Pupils paying that Fee
£	%
0–10	10
10–15	28
15–20	22
20–30	27
30 and over ..	13
Total of Percentages	100

Source: Questionnaire completed by School Managers.

In addition there were also about 300 boarding pupils in the sample with an average fee of about £100.

5.14 If one were to take the returns on which the above table is based as being representative of all the schools,[3] the total fees chargeable for the 19,255 pupils enrolled in such schools at February, 1963 would amount to £425,000. The actual amount received by the schools would, however, be less than this, as schools frequently reduce the fee where more than one child from the same family attends the school. Moreover, in cases of hardship payment of fees may be waived either explicitly or tacitly. In addition to fees chargeable, therefore, schools were also asked for the amount of fees actually received during the year. For the schools shown in Table 5.3 this varied from as low as 60 per cent up to 100 per cent of fees chargeable, with an average of 85 per cent. Applying this average of 85 per cent to the estimated total for all schools of £425,000 would give a figure of £362,000 for actual fee income. This would represent for day pupils only (excluding boarding fees and boarders) an average of £19 per pupil per annum. Since, however, the schools not included in these returns are thought to charge appreciably higher fees, a figure of £25 seems more plausible. The total number of boarding pupils in non-aided primary schools is not known.

5.15 As already indicated, the expenditure pattern of these schools is more difficult to establish. Many schools which also had secondary departments, made no apportionment for such items as maintenance, cleaning and so forth. Again part-time teachers often appear to account for a significant fraction of teaching costs and it is thus difficult to assess the composition of the expenditure pattern. Many of the schools are conducted by Religious Orders and staffed, in part at least by their members, who are not shown as receiving any salary; teaching expenditure, therefore, appears extremely low (see Annexe E). As the expenditure pattern of the schools is so complicated, it would appear to be simpler to use school income as a basis for projecting future trends.

5.16 Pupil numbers for these schools were projected to rise by about 50 per cent between 1962/63 and 1970/71 which would be one factor contributing to increased expenditure. Whether, and to what extent, fee levels might also rise is difficult to predict. In the absence of specific data, the simplest assumption is that unit teaching costs will rise at rates similar to those of national schools, which would suggest an increase of about one third in unit costs by 1970. In the case of schools which are effectively junior departments of secondary schools and linked financially with the secondary departments, cost increases would be more problematical, reflecting such elements as the financial position of the secondary school or the ability of the Religious

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[3] We are not altogether satisfied that it is. See Annexe E.

Orders to continue providing extra teachers. It seems reasonable to assume, however, that part at least of increases in costs will be reflected in rising fees. Accordingly, for non-aided primary schools as a whole it will be assumed that fee levels will on average have risen by one-third by 1970 compared with 1961. This coupled with the increase in pupil numbers would mean that fees should yield just £1 million.

5.17 In chapter 4, it was estimated that 6,000 new pupil places would be needed by 1970/71 to cater for increased enrolments in non-aided primary schools. We have no information on which to base an estimate of the cost of providing these places. Generally however, we would expect the cost to be rather more than for national school building but less than the £300 per place estimated for secondary schools. On the arbitrary assumption that new places in non-aided primary schools would cost £150 each, total capital expenditure over the eight years 1963/71 is estimated at £900,000.

SECOND LEVEL

SECONDARY SCHOOLS

5.18 The financing pattern in secondary schools lies somewhat between that of national schools on the one hand and non-aided primary schools on the other. No historical data were available as to the income and expenditure pattern of these schools when we began our work. The schools receive substantial financial grants from public funds however, and data on these grants are available. In order to form some indication of the magnitude and composition of total spending, schools were asked, as part of a questionnaire, to furnish details of their income and expenditure for the year 1961/62. Returns were received from 386 schools, representing 71 per cent of schools and 70 per cent of pupils. The proportion of pupils in the response was uniform by size of school and by type of school (boys, girls, mixed). There were relatively rather more boarders than day pupils in the response (See Appendix V). In analysing the data, schools were classified in three groups, those with day pupils only, those with boarding pupils only and those which had both, called 'combined'. It will be convenient to frame the discussion in terms of the day pupils, with just a brief summary for boarding pupils. More complete details are contained in Appendix V.

5.19 By combining school data with official data the following table, which may be thought of as the current income of schools, was obtained, excluding the boarding element in fees.

TABLE 5.4

Estimated Income[1] of All Secondary Schools, 1961/2, by Source of Income

	Source of Income				
	Fees[2]	Other School Revenue[2]	State Grants[3]	Teachers' Incremental Salaries[3]	Total
Income (£'000)	847	324	1,022	1,907	4,100
Percentage Distribution . .	21	8	25	46	100

[1] Excluding the boarding element in fees.
[2] Based on returns accounting for 70 per cent. of pupils, adjusted to cover all pupils.
[3] Appropriation Accounts, 1961/2.

The item fees is self-explanatory; other school revenue covers miscellaneous items e.g. income from endowments, fees for extra subjects and so forth. State grants refer mainly to capitation grants payable to schools for each recognised pupil on roll. The final item—incremental salaries—is not, strictly speaking, part of school revenue at all. It is that portion of teachers' salaries which is paid by the State and is paid directly to the teachers concerned, but since the schools also pay salaries to teachers, it seems convenient to treat the state payments as a receipt by the schools and then show total salaries on the expenditure side of the schools' accounts. It will be seen that for the schools as a whole the two items of state grants account for 71 per cent of income, excluding the boarding element in fees.

5.20 In addition, there was also a substantial amount of fee income in respect of the boarding costs of boarding pupils. If this is included, fees as a percentage of total income naturally rise, since this income is in addition to the fees shown in Table 5.4. The amount of boarding fee income is estimated from the returns at £1,742,500. Thus, of school income as a whole state grants amount to 50 per cent of the total. In the case of boarding schools only, this percentage drops to 27.5. It may be of interest at this point to summarise the fee levels of the schools covered by the returns (Table 5.5).

5.21 It will be noted that almost 75 per cent of day pupils were charged less than £20 per annum. The classification in this table relates to fees chargeable; the aggregates shown in Table 5.4 referred to fees received. It is also necessary, therefore, to know the relationship between the two. For day pupils, receipts amounted to 84.3 per cent of chargeable fees, while for boarders the percentage was 89.3 per cent. In some cases fees may be reduced or waived and some

TABLE 5.5

SECONDARY SCHOOLS

Percentage Distribution of Secondary School Pupils by Fee Level, showing Day and Boarding Pupils Separately, 1961/62

(Based on returns accounting for 70 per cent of pupils)

Percentage

Fee Levels	Day Pupils	Boarding Pupils
£		
0–10	19·7	—
10–15	42·0	—
15–20	11·8	—
20–25	7·9	5·3
25–50	15·0	
50–75	2·6	33·2
75–100	1·0	24·2
100–150	—	24·3
150 and over ..	—	13·0
Total of Percentages	100·0	100·0

secondary schools also award scholarships. Since these considerations apply mainly to day pupils they account for the major part of the difference between the percentage receipts from day and boarding pupils.

5.22 Table 5.6 summarises the expenditure pattern of secondary schools, excluding boarding expenditure.

TABLE 5.6

Secondary Schools—Estimated Current Expenditure[1] Per Pupil, 1961/2 (excluding Boarding Expenditure) by Size of School

Size of School	Teaching Cost Per Pupil	Other Current Cost per Pupil	Total Cost per Pupil
Pupils:	£	£	£
Less than 100	40·7	12·7	53·4
100–149	35·2	7·4	42·6
150–199	32·5	10·1	42·6
200–299	29·8	7·5	37·3
300 and over	28·1	9·8	37·9
Average for all Schools ..	33·3	9·5	42·8

[1] Including state incremental salaries to teachers.

Of this average cost of £42.8, 78 per cent is accounted for by teaching costs. This expenditure amounted to 84 per cent of the income of schools. Compared with the estimated income, this would give an apparent surplus of about £600,000, an average of about £8 per pupil. Certain factors must be borne in mind here however. First the difference may be, at least in part, the result of statistical inaccuracies on the income or expenditure sides, each of which is likely to contain some margin of error. Secondly, we have not imputed any basic salaries for religious teachers who constitute about half of the incremental teachers nor salaries for part-time religious teachers. Also, as Table 5.5 shows, there are marked differences in the size of fees, so that the average could be quite misleading. 'Other school revenue' (Table 5.4) amounts to half of the apparent surplus. Lastly, until 1964 capital expenditure had to be met entirely by the schools themselves. It may be of interest to note briefly the schools' activities under this head.

5.23 School managers were asked for details of any capital expenditure incurred in the five years up to and including 1961/62. Replies indicated that for the schools (day and boarding) who replied a total of just over £5 million had been spent, 60 per cent on new school buildings and 20 per cent on major extensions or restorations of existing school buildings. 5 per cent was spent on school equipment, while 15 per cent went on new residential accommodation and equipment. The estimate of expenditure on building by all secondary schools in 1961/62 would be £1.25 million.

5.24 Total estimated expenditure of schools for 1961/62 is summarised in Table 5.7, which is based on the data obtained from the questionnaire. (Details are given in Appendix V). It may be observed that the figure for 'boarding' is in fact derived from the income for this item as given in paragraph 5.20, less an estimated £100,000 for debt service.

TABLE 5.7

Estimated Total Expenditure of Secondary Schools, 1961/62

Current Expenditure	£'000
Teachers' Salaries (including superannuation contribution)	2,700
Boarding	1,640
Interest Payments (T) ..	400
Other	470
Total Current Expenditure ..	5,210
Capital Expenditure (Building)	1,250
Total Expenditure	6,460

5.25 In addition to expenditure by schools there was a further item of public spending on secondary education amounting to £110,000 for the year 1961/62 on scholarships and prizes. These were mainly awarded by county councils. Since the bulk of the moneys would be used by the recipients for paying fees, the major part of this £110,000 might be thought of as constituting part of the fee and other income of the schools and will be so treated in the summary tables at the end of this chapter. Non-school expenditure by parents on books etc. is estimated to have amounted to £250,000 (on the basis of £3 per pupil).

5.26 With the foregoing data as a basis, the projection of future income and expenditure may now be considered. Dealing first with school income, state grants for teaching purposes may, as before, rise for three reasons—increases in numbers, increases in salaries and an increased proportion of more highly paid teachers. Pupil numbers were (in Chapter 3) projected to rise by 42 per cent by 1970/71 compared with 1961/62. Maintaining the present pupil/teacher ratio as discussed in Chapter 4 would mean a 42 per cent increase in the number of teachers. Teachers' salaries may be projected to rise in line with increases in gross national product at the same rate as that assumed for national teachers. The third factor is quantitatively less important, but may formally be noted for the problems it poses. Generally, secondary teachers are available in adequate numbers, but for subjects such as mathematics, science and some modern languages, shortages already are understood to exist and may continue to do so in the future. Consequently it may be necessary to pay higher salaries to attract sufficient qualified people to teach these subjects.

5.27 State grants (other than teaching) may be considered under a number of separate headings, beginning with the most substantial item, the capitation grant for pupils. Expenditure on this item can vary for three reasons; first, because of a change in the number of recognised pupils; secondly, because of a change in the amount of grant per pupil; and thirdly, since there are different rates of grant for senior and junior pupils, by a change in the composition of the total pupil numbers. All three influences are reflected in the data. During the period from 1955/56 to 1962/63 the number of pupils rose from 59,300 to 84,900, an increase of 43 per cent. The grant per pupil remained constant at a maximum of £11 per annum for junior pupils (i.e. pupils up to intermediate certificate) and £16 annually for senior pupils. During the same period there was some change in the composition of the total, senior pupils rose from 14,300 or 24 per cent of the total in 1955/56 to 22,000 or 25 per cent in 1962/63.

5.28 For the year 1964/65 the capitation grant has been increased to a maximum of £14 for junior and £19 for senior pupils annually, and these amounts have been used for the forecast year 1970/71. The total number of pupils is expected to rise to 114,000 by 1970/71. Of this total, senior pupils are expected to account for 32,500 or approximately 29 per cent. Using these details the projected total of capitation grants would be as shown in Table 5.8.

5.29 The next item is laboratory grants, which refers to grants made to schools for the teaching of science, domestic economy and manual instruction. The grants are paid on a class basis, the maximum being £45 per class per annum. Two components have been added in recent years. First, with effect from 1962/63, grants have been made towards the furnishing and equipping of laboratories. These grants are estimated to cost £30,000 for 1962/63, £50,000 for 1963/64 and £40,000 for 1964/65. The second component, introduced in 1964/65, consists of a teaching grant for science and is estimated to cost £35,000 for that year. This grant is given to schools who employ science graduates, to enable them to offer higher salaries to such teachers.

5.30 In projecting the future level of grants it has been assumed that the rate of class grants remains unchanged, that equipment grants average £50,000 annually, and teaching grants rise to £70,000. State expenditure on class grants is projected to rise by 30 per cent between 1964/65 and 1970/71 as a result of increases in the number of classes. This increase in class numbers is based on the assumption that the same proportion of additional pupils will be studying these subjects as was doing so in the year 1963/64.

5.31 Irish and bilingual grants refer to amounts paid to schools where subjects are taught through the medium of Irish. In projecting future expenditure it is assumed that the rate of grant remains unchanged, but that the number of eligible pupils (the basis for making the grant) rises by 10 per cent as a result of the general increase in pupil numbers.

5.32 The only additional item in the table relating to the forecast years, is 'grants towards school building charges'. This refers to the scheme announced by the Minister for Education in May, 1964. For the purposes of the present table it has been assumed (1) that the number of pupil places built by schools eligible for such grants will be 25,000 by 1970/71, (2) that the average cost per pupil place will be £300, (3) that the annual charge on the capital sums involved (interest plus sinking fund) will be 6½ per cent, (4) that the annual state grant will be 60 per cent of such charges, and (5) that there would be a 5 per cent reduction in the capitation grant payable in respect of all the pupils of such schools. The result of these calculations is the amount shown in Table 5.8. It should be emphasised that this in no way purports to be a description of the nature or the extent of the proposed scheme. It is intended merely as providing a basis for deriving a projection of the future position.

5.33 The remaining income items for consideration are fees and other school income. It is impossible to discuss these adequately without considering the expenditure pattern of the schools. It is not proposed to do so here, beyond noting that most of the expenditure items included in Table 5.7 are likely to rise in cost during coming years. Items such as maintenance and cleaning may be taken to rise in cost at a rate similar to that projected for national schools. Items such as rents, rates or loan charges are more difficult to project. An arbitrary assumption of a 10 per cent increase by 1971 will be made. Finally, it may be noted that basic salaries to teachers have already risen by about 40 per cent since 1961/62. While a part of this increased expenditure would be met from state grants, it seems reasonable to conclude that there would be some pressure on fee levels also. Accordingly, fees will on average be assumed to increase 20 per cent by 1970/71 compared with 1961/62. Other school income will be assumed to rise by 20 per cent. On this basis Tables 5.8 and 5.9 showing estimated school income and expenditure for 1970/71 would read as follows :

TABLE 5.8

Projected Income of Secondary Schools, 1970/1

		£'000
(1) Fee Income (Day and Boarding)		4,000
(2) Other Income		390
(3) Incremental Salaries		3,680
(4) State Grants:		
(*a*) Capitation	1,750	
(*b*) Laboratory	220	
(*c*) Irish and Bilingual	80	
(*d*) Building Grants (Net)	230	
		2,280
TOTAL		10,350

TABLE 5.9

Projected Expenditure of Secondary Schools in 1970/71

	£'000
CURRENT EXPENDITURE:	
Teachers' Salaries (including superannuation contribution)	5,200
Boarding	2,600
Interest Payments (T)	710
Other	700
Total Current Expenditure	9,210
CAPITAL EXPENDITURE:	
Building	1,000
Total Expenditure	10,210

5.34 In addition to school expenditure, it is necessary to take account of grants to pupils in the form of scholarships. This comes from two sources, the schools themselves and public authorities. Scholarships for those schools contained in the sample had a value of £12,000 in 1961/62. Assuming this was representative, the position for all schools would be a total value of £17,000. These school scholarships are not reflected in the financial tables shown above since no actual money flows are involved. As the policy of schools regarding scholarships is not known, it will be assumed that the number of scholarships is kept constant for coming years. Reflecting anticipated fee increases the value of such scholarships is taken to rise to £20,000 by 1971.

5.35 Public expenditure on scholarships has risen substantially since 1961/62, as a result of the 1961 Scholarship Act. Under this Act it would seem that expenditure would reach a maximum of about £360,000 by the year 1965/66, and this figure is taken as also being applicable for 1971.[4] Of this total £200,000 would come from central and the remainder from local government sources. The number of pupils covered by such scholarships would be about 10,000. Since scholarship moneys are used by the recipients to pay fees and other expenses, it may be appropriate when estimating net expenditure from public and private sources to deduct the value of state scholarships from fee income in order to arrive at a figure for net private spending. This will probably understate private spending, since not all scholarship money will go on direct fees etc. but in the absence of any data on the point, this assumption will be used. In sum then, spending on scholarships from both sources

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[4] As of going to press, it has been announced by the Minister for Education that it is proposed to double expenditure on scholarships to a maximum of £720,000 by 1971.

(i.e. State and schools) would total at least £380,000 by 1971. Finally, the remaining item of current expenditure—namely books etc. borne by parents is assumed to rise to £350,000 by 1970/71.

5.36 It is also necessary to note the likely capital expenditure of secondary schools for coming years. A figure of 25,000 pupil places was used above (paragraph 31) at a cost of £300 per place, this gives a total expenditure of £7.5 million by 1971 on the part of eligible schools. In the previous chapter it was estimated that a total of at least 30,000 places would be provided by 1971. If it is assumed that the difference between this total and the figure of 25,000 mentioned above is the number provided by schools not eligible for grants, and that costs per place are similar, this implies expenditure by such schools of £1.5 million making an overall total of £9 million.

VOCATIONAL SCHOOLS

5.37 The financing pattern of vocational schools differs significantly from that of the other divisions. The bulk of their income is derived from public funds, the largest portion coming from central government and the remainder from local authorities. Fee and other income is relatively small. Data on the aggregate income and expenditure of the various vocational educational committees are available for past years and are summarised in Appendix V. The position for 1961/62 is summarised in Table 5.10.

TABLE 5.10

Income and Current Expenditure of Vocational Education Committees 1961/62

Source of Income	£'000	Percentage of Income	Pattern of Expenditure	£'000	Percentage of Income
Central Government[1].	1,531·9	58·4	Instruction	1,658·6	63·2
Local Authorities[2]	838·8	32·0	Administration ..	202·3	7·7
Fees	154·2	5·9	Maintenance etc. ..	471·7	18·0
			Debt Service (T)[3] ..	136·0	5·2
Sale of Books etc.	15·1	0·6	Scholarships (T)[4] ..	42·1	1·6
Other	82·6	3·1	Other	41·0	1·6
TOTAL ..	2,622·6	100·0	TOTAL ..	2,551·7	97·3

[1], [2] Two items of expenditure, which are borne directly by the State and the Local Authorities and are not included in this table, are discussed in paragraph 5.40.

[3], [4] Transfer items. ' Debt Service ' includes interest on loans and repayments of principal.

5.38 The level of central government grant to vocational education committees varies somewhat as between committees. In general, the rate of grant for counties is £1 for every £1 allocated by the appropriate local taxation authority. In the case of the seven urban[5] and three borough committees (Cork, Limerick, Waterford), the state grant is £4 for each local £1, while in Dublin City it is £2. In aggregate approximately 65 per cent is the state and 35 per cent the local proportion of total public contributions towards current vocational expenditure. Fees and sale of books are self-explanatory. The remaining residual category of income covers such items as payments by industry for special courses, receipts for the letting of premises, and so forth.

5.39 On the expenditure side the first item, covering all payments to teachers, is the dominant one. Administration refers to clerical, travelling and similar expenses. The next item is more complicated. In addition to maintenance in the usual sense, it includes purchases of classroom materials and minor equipment (which latter might be taken as capital expenditure). The fourth item refers to interest payments and repayments of principal in respect of earlier borrowings by the committees themselves For the year 1961/62 these payments were estimated to total £136,000. In the Annual Reports this item is included under maintenance. Scholarships are self-explanatory, while the last item is miscellaneous in character and unimportant in extent.

5.40 Two items of direct central and local government expenditure referred to in the footnote to Table 5.10 call for some explanation. They are superannuation (State £34,300, Local Authority £32,400) and debt service (State £59,400, Local Authority £59,300)—the figures given are for 1961/62. Superannuation payments to staff of vocational committees are paid by the parent local authorities out of their general funds. The State, however, recoups one-half of the annual expenditure. Before 1948 the staff did not pay superannuation contributions; all new appointees since then have 5 per cent deducted from their annual salaries. Half these contributions are paid over to the local authorities and half to the Department of Education. How these contributions are handled is not shown in the published accounts. Accordingly, the figures in Table 5.10 for central and local grants are gross, i.e., the contributions have not been deducted. Correspondingly, they are included on the expenditure side under instruction, administration and maintenance. However, to avoid duplication, the superannuation expenditure of the State and local authorities given earlier in this paragraph is shown net, i.e., the gross expenditure has been reduced by the amount of contributions for which each took credit. (On a minor technical point, the State and the local authorities do not in fact take credit for equal amounts. The local authorities are paid up to date in the current year, the state share is paid a year in arrears). In 1961/2 the total contributions paid back by the committees out of their grants was £37,900—(£17,973 to the State and £19,928 to the local authorities). In the case of debt service, payments are made by the State, the local authorities and by the vocational education committees. Committees may borrow for capital purposes on their own account : the item Debt Service in Table 5.10 refers to this as explained in paragraph 5.39. Alternatively, they may receive capital grants from the local authorities. In that case it is the local authorities which borrow the money and bear repayments and interest. However, the State recoups local authorities one-half of their expenditure.

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[5] Bray, Drogheda, Dun Laoghaire, Galway, Sligo, Tralee, Wexford.

5.41 Future expenditure may now be discussed. The projected number of teachers shows an increase of 50 per cent by 1970/71 compared with the estimated number in 1961/62. Salaries, in line with the assumption made earlier for other teachers, may be taken to rise by 36 per cent between 1961 and 1970. Allowing for these changes, teaching expenditure would double by 1970 and this estimate is shown in Table 5.11. Administration costs may also be taken to rise, though since they have risen in the past at a slower rate than teaching costs (100 against 150 per cent for the past decade) it will be assumed that this trend will continue resulting in a 70 per cent increase by 1970.

TABLE 5.11

Projected Income and Current Expenditure of Vocational Education Committees
1970/71

Source of Income	£'000	Percentage of Income	Pattern of Expenditure	£'000	Percentage of Income
Central Government[1]	2,970	59·6	Instruction	3,385	68·0
Local Authorities[2]	1,600	32·1	Administration ..	344	6·9
Fees	290	5·8	Maintenance ..	788	15·8
			Debt Service ..	350	7·0
Sales of Books etc.	20	0·5	Scholarships ..	63	1·3
Other	100	2·0	Other	50	1·0
TOTAL ..	4,980	100·0	TOTAL ..	4,980	100·0

[1], [2] Excluding direct expenditure, superannuation (State £75,000, Local Authorities £70,000), debt service (State £175,000, Local Authorities £175,000). See paragraphs 5.40, 5.45 and 5.46.

5.42 Maintenance expenditure is more difficult to project. It will be assumed that unit costs will rise, following the assumption made for national schools, by 11.3 per cent by 1970/71. Since the number of students for whom these services would be provided, would rise by about 50 per cent compared with 1961/62, this would suggest that total expenditure would increase by about 67 per cent.

5.43 Other expenditure, being a residual, tends to fluctuate. In the absence of any clear trend it will be assumed to be £50,000. Spending on scholarships has been rising steadily, and has increased 80 per cent in the past decade. Reflecting the rise in pupil numbers it will be assumed that spending will rise by a further 50 per cent by 1971.

5.44 This leaves interest payments as the remaining item. Expenditure here will clearly depend on capital expenditure of preceding years. It also, less clearly, depends on the financing method used. Taking total expenditure first, we have seen in paragraph 4.33 that an extra 16,500 pupil places are planned for 1970/71, compared with 1963/64. At £300 per place this would suggest a total of £5 million for the extra places. Replacement building would amount to approximately £0.5 million. In addition there would be expenditure of £1 million for a technological college in Dublin, and £1.5 million for a similar building in Cork. Another £2 million should possibly be allowed for additional expenditure on technical education, for regional technical colleges, specialised training centres etc. This makes a general total of £10.0 million.

5.45 To estimate loan charges of vocational committees, it is also necessary to take account of the financing methods used. The two ways in which this may be done have already been explained. If a committee receives capital grants from the local authority, it will have no annual charge to meet. In recent years, vocational committees have been raising an increasing proportion of their capital needs by way of such grants. For the year 1962/63 the proportion was about 50 per cent. A continuance of this fraction gives approximately £5 million as the amount on which interest would be payable. Coupled with older debts still outstanding the projection would yield a total debt service charge of £350,000 by 1971. The State and local authorities would be liable for a similar amount to cover the balance of the capital expenditure.

5.46 The gross amount of superannuation to be borne directly by the State and the local authorities, as described in paragraph 5.40 is likely to increase to about £300,000 by 1970/71, due to a slight increase in the numbers retiring and to the higher level benefits which would be payable. Contributions, however, may also be expected to increase, to around £160,000, reflecting increases in teacher numbers and salaries and also the fact that by 1970/71 a greater proportion of teachers would be paying contributions. The estimated net outlay on superannuation in 1970/71 is accordingly taken at £145,000, divided equally between the State and the local authorities.

5.47 The total projected expenditure is taken as equal to the projected income. It is assumed that fees will continue to be much the same fraction of total income. Sales of books, etc. may be taken to rise to £23,000 in line with pupil numbers. Other income is estimated at £100,000. In allocating the remainder as between central and local government it is assumed that the ratio 65 per cent to 35 per cent of central to local contribution will be maintained.

5.48 Finally, as with other schools, parental expenditure on books, etc. not covered by the above tables may be noted. This is estimated to have been of the order of £50,000 in 1961/62 and is assumed to double to £100,000 by 1970/71.

COMPREHENSIVE SCHOOLS

5.49 In Chapter 3 a total enrolment of 5,000 in 1970/71 was projected for the proposed comprehensive schools. As the current and capital costs will be met mainly from public funds, the unit costs are likely to be closer to those of vocational rather than secondary schools. Total current expenditure therefore, may be around £500,000, the larger part, £300,000 being for teaching services. Fees may contribute around £15,000 and other parental expenses may amount to £25,000 per annum. On the capital side, again assuming a cost per place of £300, expenditure would amount to £1,500,000, all to be provided from public funds. Interest and repayment of this sum would mean an annual charge of approximately £60,000. As we pointed out in paragraph 3.16, however, only about half that number of pupils is likely to be additional to those already accounted for in secondary and vocational schools. We, therefore, take only half of these projected costs, although this may understate the costs.

OTHER SECOND LEVEL

5.50 There remains a number of second level divisions for consideration, including agricultural schools and colleges, non-aided commercial schools, schools of domestic economy and non-aided secondary schools and religious establishments. The total pupil enrolment of all these establishments was about 4,000 in 1963/64 and is projected to rise to 5,000 by 1970/71 (Table 3.1).

5.51 Financial data for these areas are very slight, in some cases non-existent. Agricultural colleges and rural schools of domestic economy receive grants from the Department of Agriculture to cover their costs.[*] Some of them also charge fees which are then remitted to the Department; accordingly, in estimating their expenditure, only the net amount of the subvention is shown as state, the fees being shown as private expenditure. There are also residential schools of domestic economy, which are paid grants by the Department of Education, and schools run by the Department of Lands, Defence and Justice. No data are available for the non-aided schools, secondary, commercial, or religious. As an arbitrary estimate their combined expenditure is taken to be £80,000 in 1961/62 and £140,000 in 1970/71.

5.52 Making the appropriate allowance for increases in teaching and other costs, the projected position for the aided schools in 1970/71 is as shown in the following table.

TABLE 5.12

Other Aided Second Level Education: Estimated Current Expenditure 1961/62 *and* 1970/71

(£'000)

Type of School of College	1961/62		1970/71	
	Total	Of which State Grants	Total	Of which State Grants
Agricultural and Rural Domestic Economy.	200	160	350	300
Residential Schools of Domestic Economy.	30	20	50	35
Forestry Schools	25	25	35	35
Other Aided Schools[1]	20	20	30	30
TOTAL ..	275	225	465	400

[1] As in paragraph 1.34.

THIRD LEVEL

UNIVERSITIES

5.53 University income arises from three main sources, state grants, fee income and income from endowments. On the expenditure side, as with other levels, the most important item is teaching costs.

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[*] Some also receive grants from the Department of Education as containing residential schools of domestic economy.

Accounts for the year 1961/62 may be summarised as follows, the figures being rounded off:

TABLE 5.13

Current Income and Expenditure of Universities[1] 1961/62

Income	£'000	Expenditure	£'000
State Grants[2]	1,200	Teaching and related Expenditure	1,250
Fees	750	Scholarships	50
Other	250	Other	800
TOTAL ..	2,200	TOTAL ..	2,100

[1] Excluding College of Surgeons and Maynooth.

[2] *Source:* Appropriation Account 1961/62 and Statistical Abstract, 1963.

5.54 In seeking to project the future situation of university finances it will be convenient to consider first the expenditure side. Teacher numbers have been considered in chapter 4. Salaries may be expected to rise at the rate used at other levels, while no change in staff composition is assumed. The result of these estimates would be to give the expenditure of £2.9 million as shown in Table 5.14. Administrative expenditure may be projected to rise at a somewhat lower rate than teaching expenditure, on the assumption that while salary levels may rise at the same rate, administrative staff numbers will rise more slowly than teacher numbers. Maintenance and other expenditure may be expected to rise as at other levels, through increases in unit costs and increases in student numbers.

5.55 On the income side it will be assumed that endowment income will remain almost constant, leaving increased expenditure to be met mainly from either fees or state grants. For the past decade state grants have risen at a faster rate than fee levels, for the future, fee income is projected to more than double, mainly as a result of increased student numbers. Thus fee income will rise at a faster rate, but by a smaller absolute amount than state grants.

TABLE 5.14

Projected Current Income and Expenditure of Universities 1970/71

Income	£'000	Expenditure	£'000
State Grants	2,700	Teaching and Related Expenditure.	2,890
Fees	1,700	Scholarships	50
Other	300	Other	1,760
TOTAL ..	4,700	TOTAL ..	4,700

5.56 Capital expenditure for coming years is expected to be heavy and it is assumed that it will be met entirely from state funds. The components of this expenditure have been mentioned earlier. Up to 1964 £2.8 million had already been allocated for the building of the science block of the new college in Dublin. It may be assumed that at least £8.0 million more will be needed over the coming years to complete the project. In Cork the new science block is estimated to cost £1,143,000 and it may be assumed that at least £250,000 will be necessary in Galway, making a total of £9.4 million.

5.57 It should be added that this relates only to capital schemes which are already in effect or agreed to in principle. It does not allow for any additions which may be necessary to existing plans for Belfield or for any expenditure which might be necessary as a result of the recommendations of the Commission on Higher Education.

5.58 Of the other items, the most important is expenditure on scholarships. The universities themselves awarded scholarships whose estimated value was £50,000 in 1961/62 and it is assumed in Table 5.14 that this figure will be maintained for 1970/71. Scholarships from public funds are governed by the 1961 Act. The maximum expenditure would appear to be of the order of £100,000 for central, and £80,000 for local government. This level should be reached by 1965/66 and will be assumed to continue for 1971.[7] Finally, parental/student expenditure on books etc. is estimated to have been £100,000 in 1961/62, and to rise to £250,000 in 1970/71.

TEACHER TRAINING

5.59 There are two areas which fall under this heading, national teacher and vocational teacher training. In the case of national teachers and domestic science teachers for post-primary schools the training is provided by privately conducted colleges with the aid of substantial state grants. In projecting the future position the appropriate allowances for increases in costs and student numbers have been made. Vocational teacher training, which relates to only a few subjects is organized by the Department of Education. Similar allowances have been made for increased expenditure in this area. Projected income is taken to balance projected expenditure.

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[7] As in the case of post-primary scholarships (footnote 4) the Minister for Education has announced that it is proposed to double expenditure by 1971.

TABLE 5.15

Estimated Income of Training Colleges

(£'000)

Source	1961/62	1970/71
State[1]	157	240
Private[2]	100	140
TOTAL ..	257	380

[1] Appropriation Accounts.
[2] Estimated.

5.60 Under capital expenditure, a total of £250,000 is assumed for the reconstruction and extension of a training college. No data were available on the non-aided training colleges.

OTHER THIRD LEVEL

5.61 Of the remaining areas of state-aided third level education, the most important are the Colleges of Surgeons, Pharmacy, Dentistry and Art. The estimated income for these institutions is as shown below. Within the past year or so the Colleges of Dentistry and Pharmacy have been granted state aid for the first time. It seems reasonable to assume that such grants will rapidly become the most significant item in their incomes.

TABLE 5.16

Estimated Income: Other State-Aided Third Level

(£'000)

Source	1961/62	1970/71
State	20	150
Private	165	190
TOTAL ..	185	340

5.62 Under capital expenditure, an estimate of £500,000 has been made for the building of new premises for the National College of Art.

OTHER STATE EDUCATIONAL EXPENDITURE

5.63 There remain a number of items of state expenditure in the educational sphere, some of which are substantial from a financial viewpoint. A summary of this expenditure for the year 1961/62 together with a projection of the 1970/71 position is as follows:

TABLE 5.17

Other Educational Expenditure from Public Funds
(£'000)

	1961/62	Projected 1970/71
	£	£
1. Office of Minister	443	750
2. Posts and Telegraphs	14	35
3. Stationery Office	25	40
4. Rates on Buildings	10	10
5. Maintenance by Office of Public Works ..	83	100
6. Administrative costs by Office of Public Works	185	350
7. Gaeltacht Grants	31	60
8. Reformatories and Industrial Schools	463	600
9. School Medical Services	140	225
10. School Meals	170	200
11. Superannuation	90	130
TOTAL ..	1,654	2,500

5.64 The first item refers to the general administrative expenditure of the Department of Education, office and inspectorial staff and so forth. It does not, however, include all of the expenditure shown in this heading in the official accounts, grants for various museums, international organisations and so forth being excluded.

5.65 Items 2 to 5 are self-explanatory and relate to the cost of services provided for the Department of Education by other Government Departments, or in the case of rates, by the local authority. Item 6 is a more unorthodox item and refers to the administrative expenditure involved in the national school building programme. The figures for capital expenditure, given in the table relating to national school expenditure, (Table 5.1) refer only to the actual costs of construction etc.; they do not include any part of the administrative expenses incurred by the Office of Public Works in the running of this programme. Accordingly, Item 6 is a rather crude estimate of such costs, obtained by calculating educational expenditure as a fraction of total expenditure on Public Works and Buildings and then taking this same fraction of the total administrative expenditure of the Office of Public Works as being the amount attributable to education. [illegible] does not pretend to be an accurate reflection of these costs, but is rather indicative of their magnitude. The estimate is believed to err on the conservative side.

5.66 The next item refers to the expenditure incurred by the Department of the Gaeltacht, consisting mainly of grants towards the cost of summer study courses in the Irish language in the Gaeltacht (Irish speaking areas).

5.67 The claims of the remaining items for inclusion in a list of educational costs are more controversial. Item 8 refers to the capitation grant payable in respect of children in reformatories and industrial schools. This grant (which is borne equally by the State and local authorities) is primarily to cover the maintenance costs of such children, the major educational costs (teachers' salaries) being borne on the vote for national schools. As the schools however, incur some educational costs themselves, there may be some point in listing this maintenance expenditure, since the ability of such schools to provide educational facilities must in part be influenced by the amount of the maintenance grants. Again, the incurring of maintenance expenditure may be a necessary pre-condition for ensuring that such children receive an education. This last point also explains the presence of the next two items. Medical services and meals (which are again financed equally by the State and local authorities) have no direct educational content, but they may be necessary to enable some children to benefit from educational facilities.

5.68 The final item refers to the expenditure on pensions etc. for civil servants who were engaged in the Department of Education.

SUMMARY

5.69 This concludes the consideration of educational expenditure. All of the estimates were based on the assumption that there would be no significant rise in the general level of prices, that is, they are related to real changes in national product, and would need to be corrected for any price inflation which occurs. The estimates are summarized in the tables which follow, 5.18, 5.19 and 5.20. Table 5.18 summarizes expenditure on current resources, including superannuation. The estimates of parental expenditure on books etc. in divisions other than the national schools are also included in this table. Table 5.19 covers transfer items (interest payments and scholarships schemes) while Table 5.20 summarizes the estimated capital expenditure for the seven-year period 1964/65 to 1970/71.

5.70 The total expenditure on education as summarised in these three tables is given in Table 5.21 and expressed as a percentage of National Product. The National Product figures for the forecast year were estimated by projecting a 4.14 per cent annual increase on the 1963 figure, in accordance with the target of the Second Programme for Economic Expansion. It seemed preferable to use the three major measures of National Product for the comparison, since they each provide a somewhat different impression of the relative magnitude of educational activity.

TABLE 5.18

Estimated Expenditure on Current Resources, 1961/62 and 1970/71 by Source o Finance

(£'000)

Division	1961/62			1970/71		
	Public	Private	Total	Public	Private	Total
National Schools ..	11,044	300	11,344	16,375	325	16,700
Non-aided Primary ..	—	480	480	—	1,000	1,000
Secondary	2,929	1,881	4,810	5,730	2,770	8,500
Vocational	2,188	252	2,440	4,300	410	4,710
Comprehensive ..	—	—	—	230	20	250
Other Second Level ..	225	130	355	400	205	605
Universities	1,200	835	2,035	2,700	1,940	4,640
Teacher Training ..	157	100	257	240	140	380
Other Third Level ..	20	165	185	150	190	340
Other Expenditure from Public Funds.	1,654	—	1,654	2,500	—	2,500
Other Private Expenditure (Books etc.).	—	750	750	—	1,080	1,080
TOTAL	19,417	4,893	24,310	32,625	8,080	40,705

TABLE 5.19

Estimated Expenditure on Transfer Items by Source of Finance, 1961/62 and 1970/71

(£'000)

Division	1961/62			1970/71		
	Public	Private	Total	Public	Private	Total
Debt Service:						
National Schools ..	380	30	410	600	50	650
Non-aided Primary	—	60	60	—	80	80
Secondary	—	400	400	230	480	710
Vocational	255	—	255	700	—	700
Comprehensive ..	—	—	—	30	—	30
Other Second Level	—	—	—	15	—	15
Universities ..	—	15	15	—	10	10
Teacher Training ..	—	—	—	10	—	10
Other third Level ..	1	—	1	2	—	2
	636	505	1,141	1,587	620	2,207
Scholarships:						
Secondary	112	17	129	360	20	380
Vocational	42	—	42	63	—	63
Universities ..	96	50	146	195	50	245
Teacher Training ..	21	—	21	24	—	24
Other third level ..	1	—	1	1	—	1
	272	67	339	643	70	713
TOTAL ..	908	572	1,480	2,230	690	2,920

TABLE 5.20 -

Estimated Capital Expenditure by Source of Finance

(£'000)

Division	1961/62			1970/71			1964/65 to 1970/71 (7 year total)		
	Public	Private	Total	Public	Private	Total	Public	Private	Total
National Schools ..	1,713	285	1,998	2,150	350	2,500	15,000	2,500	17,500
Non-aided Primary ..	—	100	100	—	100	100	—	800	800
Secondary	—	1,250	1,250	—	1,000	1,000	—	7,000	7,000
Vocational	249	—	249	1,450	—	1,450	10,000	—	10,000
Comprehensive ..	—	—	—	150	—	150	1,500	—	1,500
Other Second Level ..	—	—	—	—	—	—	200	—	200
Universities	85	—	85	1,400	—	1,400	9,400	—	9,400
Teacher Training ..	—	—	—	—	—	—	250	—	250
Other Third Level ..	—	—	—	500	—	500	500	—	500
TOTAL ..	2,047	1,635	3,682	5,650	1,450	7,100	36,850	10,300	47,150

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TABLE 5.21 (*a*)

Total Educational Expenditure (£'000)

	1961/62			1970/71		
	Public	Private	Total	Public	Private	Total
Current Resources	19,417	4,893	24,310	32,625	8,080	40,705
Current Transfers ..	908	572	1,480	2,230	690	2,920
Capital Items ..	2,047	1,635	3,682	5,650	1,450	7,100
TOTAL ..	22,372	7,100	29,472	40,505	10,220	50,725

TABLE 5.21 (*b*)

Expenditure on Education as a Percentage of Gross National Product

	1961/62	Public	Private	Total	1970/71	Public	Private	Total
G.N.P. at market prices.	£722m.	3·1	1·0	4·1	£1,070m.	3·8	0·9	4·7
G.N.P. at factor cost.	£636m.	3·5	1·1	4·6	£940m.	4·3	1·1	5·4
National Income at factor cost.	£594m.	3·8	1·2	5·0	£880m.	4·6	1·2	5·8

PART II

In Part II an examination is made of the connection between the demand for persons in the labour force with various levels of educational qualifications and the supply of such persons coming from the educational sector. In chapter 6 we examine the pattern of this supply and, in the process of so doing, touch upon certain factors that influence it. In chapter 7 the present pattern of employment is examined and projections are made of its future extent and composition. In chapter 8 an attempt is then made to compare these employment requirements with the projected supply of qualified persons.

CHAPTER SIX

Educational Sector: Flow Pattern, Output, Participation

INTRODUCTION

6.1 For the purposes of our analysis and projections a great deal of information was needed relating to the movement of pupils through and out of the educational sector (the 'flow pattern'). This information was not derivable from the kind of data traditionally collected by educational authorities, which related mainly to the numbers actually in the schools (the 'stock') as this was sufficient for ordinary administrative purposes such as payment of grants. Such data were of course indispensable for our purposes also but they were not sufficient. For instance the number of students in vocational schools each year was available but one could not deduce how many entered or how many left. It was, therefore, necessary for us to organise the collection and processing of the requisite data. The most feasible source of information was the school and accordingly, the appropriate forms[1] were sent to the various schools, asking for information relating to their pupils in the school year 1962/63. It was not considered practicable in general to ask for information relating to previous years. The broad results of this survey are set out in this chapter and are used elsewhere in the report as indicated.

6.2 The main purposes for which this information was required are as follows. Firstly, in the context of the supply of qualified manpower it is clearly necessary to have an estimate of the supply being produced by the educational sector at present (the 'output'). In other words one needs to know the number of persons leaving the sector each year and such factors as their educational attainment on leaving. One also needs to know the extent to which the leavers enter the labour force. While it would be desirable in many respects to know the actual occupations taken up by the leavers, it was decided in this first instance to enquire what sector of the economy they entered.

6.3 Secondly, it was necessary to gain some insight into the possible effects that certain factors may have on the extent to which a person participates in education as a full-time student. This would clearly be of central importance in relation to the possible adoption of remedial measures if inadequacies were indicated in the supply of qualified manpower. It is central to a discussion of whether there is a wastage of talent and whether adequate opportunities for development are available generally. It would also be indispensable in the context of a policy of reducing disparities of participation, if any, attributable to such factors. Questions were accordingly included relating to family background, etc., location and attainment, factors which had proved relevant in related studies elsewhere.[2] The detailed information obtained by us in this field has been used against a background of a wealth of general information based on the census of population, which was made available to us by the Central Statistics Office.

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[1] Appendix VI.

6.4 Thirdly, with particular reference to the problems of projecting the future state of the system and as a guide to the possible effects of particular courses of action, it was necessary to obtain data on the flow pattern in detail, as for example the rates of transition between, and retention in, the various divisions of the system, and the relevant age structures. Examples would be how many secondary pupils leave school before reaching the intermediate certificate level or how many vocational continuation students reach the higher levels. Certain technical coefficients were also required such as the rates of duplication and repetition in the case of certificants e.g. the number who sit a certificate examination twice or the number who receive two certificates in one year. It was also hoped that the question on parents' education would provide some data on the general inter-relation between education and occupation.

6.5 The general response to this survey was most gratifying. The school authorities, faced with a variety of forms and requests for information, gave a ready co-operation. It is noted that, while the headmasters of large national and secondary schools are not required to engage in teaching, there are no grants for secretarial assistance in the keeping of records in those schools. A small number of returns was found unsuitable for use but this appeared to be due mainly to unfamiliarity with some of the terminology. We envisage such surveys being repeated in the future and later in this report we recommend how the collection and use of statistical information in the Department of Education should be organised so that most benefit might derive from it. It is clear that if such work is to be most profitable, the full co-operation of the conductors of the schools must be obtained.

6.6 This survey does not claim to be exhaustive or conclusive.

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[2] For references, see Hayward, O.E.C.D. DAS/EIP/63.31.

The issues involved call for a great deal of research[3] and it is to be hoped that this pilot survey will stimulate and assist such investigations in the future. For example, data such as the survey sample of those leaving national schools in 1962/63 could provide a basis for mounting a major research project at relatively little cost, in as much as the future progress of those who entered secondary school, say, could be followed without much difficulty. Such a project could produce a great deal of information both on the relationship of the educational sector to other sectors and on internal relationships within the educational sector itself.

6.7 Attainment is here measured, for want of better indicators, in terms of results in the post-primary certificate examinations. These though not compulsory are taken by 99 per cent of the schools. The absence of any general tests of the predictive value of the examinations may be noted here, as well as a possible lack of motivation for some pupils to reach more than the minimum standards, if any, required for entry to the next stage.

6.8 The destinations of the 1962/63 pupils were asked of the schools in the late autumn of 1963. It was not feasible to specify a particular date for determining destination and while most of the forms were returned in October or November, 1963 some were returned in January 1964 and indeed at Easter 1964. Emigration was not specified as a separate category as it was felt that figures for emigration would be really meaningful and useful only if tied to a particular date, preferably a later one.

PART I—FLOW PATTERN AND OUTPUT

6.9 In this first part of the chapter we shall be seeking answers to such questions as 'how many pupils leave school without reaching the post-primary level', 'how many leave secondary or vocational schools without reaching certificate level', 'what proportion of honours leaving certificants go on to university', 'how many persons holding the various certificates enter the labour force each year', and so on. Having thus asked 'how many' in the first part we shall then ask 'who' and 'why' in the second part, that is we shall examine the background of the various groups of pupils involved.

6.10 The flow pattern will be seen to be complicated and the various sections inter-related. In discussing the various sections we choose the order most suitable for presentation rather than the chronological order. We then try to combine all the data into a consistent picture in the final tables, collating it with independent data where available (Tables 6.24 to 6.26).

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[3] The discussion will indicate many areas for research.

SECONDARY SCHOOLS

INTERMEDIATE CERTIFICATE CANDIDATES 1963

6.11 Each secondary school (and secondary top) was asked to give, in aggregate, the destinations of those of its pupils who sat the intermediate certificate examination in 1963. The returns accounted for 87 per cent of the boys and 93 per cent of the girls.[4] The following table gives the percentage distribution based on the returns. (Details of the various categories and of the response rates are given in Appendix VI, paragraphs 1-3. The response is also discussed in paragraphs 6.21-22).

TABLE 6.1

General Destinations of Intermediate Certificate Candidates, 1963 *by Examination Result*[1]

(Percentage Distribution)

	Boys				Girls				
Examination Result / Destination	Honours	Pass	Fail	Total	Honours	Pass	Fail	Total	TOTAL
	Percentage								
Secondary School[2] ...	94·9	82·9	58·9	85·2	87·1	66·7	45·6	73·7	78·8
Commercial School ...	0·2	0·6	1·1	0·5	5·3	12·5	17·7	9·8	5·7
Other full-time Education	1·4	5·3	12·4	4·4	3·1	7·7	13·5	6·2	5·4
Left full-time Education	3·5	11·2	27·5	9·9	4·6	13·2	23·2	10·3	10·1
Total of Percentages ...	100	100	100	100	100	100	100	100	100
Total number of Candidates[3] ...	4,065	2,968	1,251	8,284	4,258	4,871	855	9,984	18,268

[1] 'Pass' means a pass (40 per cent) in Irish and four other subjects, 'Honours' means honours (60 per cent) in at least three subjects. Any lesser result is counted as a 'Fail.'

[2] Including Secondary Top.

[3] Annual Report 1962-63 (S.O.).

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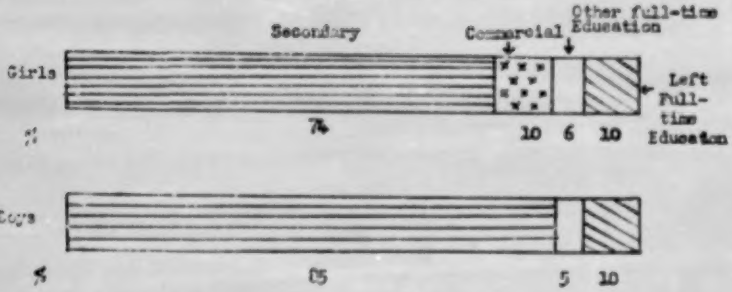
[4] No provision was made in the form for 'unknowns' but the number of candidates omitted from the returns used was negligible.

6.12 The following diagram summarises Table 6.1 :

CHART 6.1

GENERAL DESTINATIONS OF INTERMEDIATE CERTIFICATE CANDIDATES 1963 BY EXAMINATION RESULT



We see that only 10 per cent (i.e. about 1,800 persons) left full-time education at this stage. (We shall see later[5] that a considerable number leave secondary school before reaching this stage). A further 10 per cent of the girls (i.e. about 1,000) transferred to commercial school, a feature which we shall find again in dealing with other sections.[6]

6.13 Of the honours certificates only 4 per cent left full-time education ; in fact 95 per cent of the honours boys stayed in secondary school. There is a higher rate of leaving from the girls' secondary tops (13 per cent of honours, 21 per cent in all), but the numbers involved are relatively small—a total of 1,392 candidates.[7] This part of our survey, therefore, does not point to any great wastage of talent at this particular stage.

6.14 Of those who went to 'Other Full-time Education', about 280 boys[8] (half of whom had failed) and 450 girls transferred to vocational schools. From evidence on entrants to vocational schools (paragraphs 6.71 and 6.83) it appears that almost all of these went into continuation (i.e. junior) classes rather than technical. This may at first appear somewhat surprising : the explanation probably is that the girls do so for the sake of the commercial courses and the boys for the sake of the practical courses. 'Agricultural School' claimed only about 40 boys and 25 girls. Some of these girls may in fact have gone to Domestic Schools which were not specified on the form, as may many of the 140 or so returned under 'Other School or College', which also accounted for about 45 boys.

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[5] Paragraph 6.25.
[6] e.g. paragraphs 6.30, 6.57.
[7] Paragraph 4, Appendix VI.
[8] The numbers in these paragraphs were got by expanding the returns given in Table VI. 1, Appendix. The expansion may not be appropriate for small numbers.

6.15 The number who stayed back in the junior cycle of the secondary schools was appreciable—about 750 boys and 700 girls.[9] Although this phenomenon is well known, the reasons for it are not so obvious—only about 350 of them had failed while 600 had obtained honours and about 500 had passed. It can hardly be explained solely as preparation for a scholarship, since only about a hundred scholarships of limited value[10] are awarded yearly on the results of this examination. It may be due to the wide disparities in age between candidates and that some are thought too young to proceed to senior level. No minimum standard of attainment in the certificate examinations is prescribed for entry to the senior cycle.[11]

6.16. To gauge the ages of the candidates, we have tabulated below the ages of an approximate ten per cent sample[12] using the dates of birth given in the Departmental lists.[13] The distribution of ages as of 31 May, 1963 was as follows :

TABLE 6.2

Ages of sample of Intermediate Certificate Candidates 1963

	Age (in years) on 31 May, 1963						
	13	14	15	16	17	18	Total
	NUMBER						
Boys ..	2	68	315	303	64	3	755
Girls ..	10	62	370	347	59	4	852
Total ..	12	130	685	650	123	7	1,607
	PERCENTAGE DISTRIBUTION						
	0·7	8·1	42·6	40·4	7·7	0·4	100·0

This gives a median age for both boys and girls of 15 years 11½ months i.e. exactly 16 years in mid-June, the time the examination takes place.

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[9] Paragraph 4, Table 1.
[10] 112 scholarships of £15—£40 p.a. for two years. (Annual report 1962/63).
[11] cf. Rules and Programme for Secondary Schools, 1962/63 (S.O.), par. 22.
[12] Appendix VI, paragraph 6.
[13] Unpublished.

6.17 The spread of ages shown in Table 6.2 is characteristic of the system as a whole and there is much over-lapping of ages as between different stages, as may be seen in Table 1.2 in Chapter I. Persons of a given age, say 17, may be sitting for intermediate or leaving certificate or indeed their first university examination.

6.18 The fact that half of the candidates were sixteen years of age or older is of particular interest in the light of the raising of the school-leaving age to fifteen. It is sometimes assumed that this of itself would allow time for the completion of a course equivalent to that for the intermediate certificate. However, if the 1963 intermediate certificate candidates had left school at fifteen, half of them would have been a year short of the certificate examination, that is not allowing for repetition. There are no obvious grounds for assuming that the additional pupils who would be kept in school compulsorily would make faster progress than those now in school voluntarily. It would appear then, that if pupils as a whole are to reach intermediate certificate stage by fifteen, there must be some acceleration of the system, for example that pupils reach appropriate entry levels by twelve years of age. At present the median age of entry to secondary schools is thirteen years, two months,[14] our estimate of median age at intermediate level being exactly three years more as might be expected, the time spent on the course varying from two to four years.

6.19 Of those who left full-time education[15] (about 1,800) only 8.5 per cent were returned as 'unemployed, emigrated, ill, etc.' However, a further 7.5 per cent of those who left were unaccounted for as regards particular destination and another 20 per cent were employed in their own family business or farm. Thus, the percentage who left other than for profitable employment could be appreciable, the actual numbers of course being small. Of the 64 per cent who entered general employment, about a third were returned as 'other employment'. The most popular sectors were 'industry' for boys and 'public service' for girls.

6.20 As regards the attainment of those who left, the number with intermediate certificate is of course available from the returns (Table 6.1). The remainder are taken as having none of the department's post-primary certificates: the number of 'fails' in 1963 who had passed previously is assumed to be negligible, and further returns[16] indicate that none of them would have a group certificate either.

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[14] School-year 1962/63. Age on 1 August 1962 (Derived from Annual Report 1962/63).

[15] Figures derived from returns given in Appendix VI, Table 3.

[16] Paragraph 6.59, Footnote 2 to Table 6.13, and Table 6.16.

6.21 It would be of interest to see how the returns vary from one type of school to another. The number of ways in which the schools might be classified is quite high, however—size, location, fees, religion, sex, day/boarding, etc. As this part of the survey was not mechanised we limited ourselves to two aspects. Firstly it was found that the rate of leaving was appreciably higher in the girls' secondary tops[17] than in the secondary schools[18] generally. Secondly the returns were classified by the areas in which the schools were located.[19] There was a high degree of uniformity among the returns for the boys except that as regards the overall rate of leaving Dublin City[20] schools (15 per cent) were appreciably higher than average (10 per cent) and Dublin County[20] schools (4 per cent) were appreciably lower. There was also a high degree of uniformity among the returns for the girls. Here Dublin City[20] and the Munster County Boroughs[21] had the lowest rates of retention in secondary school (68-69 per cent against an average of 76 per cent) and the highest rates of transfer to commercial or other full-time education (20-22 per cent against an average of 15 per cent). The schools in the three Ulster counties had above average rates of retention in secondary school both for boys and for girls. The totals for the latter were small, however, and of course they include boarding pupils, as do all the others.

6.22 The schools not included in the response are analysed by location and size in Appendix VI (Table 6) and Table VI. 5 gives the response rate by area. It appears unlikely that the inclusion of the missing pupils would materially alter the general result. For example to increase the proportion of leavers from 10 to 11 per cent the missing schools would need to have about 20 per cent of leavers. The location of the missing schools does not suggest that. We have not analysed the destinations by size of school but the higher proportion of small schools among those missing could hardly affect the aggregate result substantially.

6.23 Such variations would be relevant to having such a survey done by sample in future. For instance the uniformity of the results by region suggest that a sample need not necessarily be balanced geographically. We discuss in Appendix VI. paragraph 6 how the results of a ten per cent sample which we took differed from the aggregate results.

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[17] Table VI.4.
[18] Table VI.5.
[19] *ibid.*
[20] For definition, see Table VI.5.
[21] Cork, Limerick, Waterford.

6.24 It is noted that 'the purpose of the intermediate certificate is to testify to the completion of a well-balanced course of general education suitable for pupils who leave school at about 16 years of age, and, alternatively, to the fitness of the pupils for entry on more advanced courses of study in a secondary or vocational school'.[22] We have seen that relatively few leave school at that stage and that hardly any enter what would presumably be considered 'more advanced courses' in a vocational school. This poses the question, to what extent should these various purposes be reflected in the examination and in the courses prescribed for it?

Secondary Schools: Leavers from Junior Cycle (Non-Examinees)

6.25 The number of junior cycle pupils who left secondary schools or secondary tops during or at the end of the school year 1962/63 without sitting the intermediate certificate examination in 1963 is estimated to be 3,363 boys and 3,186 girls, as explained in the Appendix (VI. 7). Each school was asked to give the general destinations of those leavers in aggregate. The response was poor, accounting for only 1,915 boys (56.9 per cent) and 1,858 girls (58 per cent), a total of 3,773 (57.6 per cent). Again it is likely that the terminology was not fully understood (e.g. 'intermediate certificate cycle' for 'junior cycle'). The following is the percentage distribution shown in the returns:—

TABLE 6.3

General Destinations of Leavers from Secondary Schools: Junior Cycle, 1962/63 (other than Intermediate Certificate Candidates, 1963)

	General Destination				
	Vocational School	Other Full-time Education	Left Full-time Education	Total	Total Leavers[1]
	Percentage Distribution[2]				Number
Boys ..	30·7	4·5	64·8	100	3,363
Girls ..	23·1	12·4	64·4	100	3,186

[1] Estimated, Appendix VI, Paragraph 8.

[2] Based on approximately 60 per cent. response.

6.26 The details of the returns are given in the Appendix, Tables VI. 9(a), (b), (c), the percentage distributions being given in the following Tables 6.4 and 6.5.

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[22] Rules and Programme for Secondary Schools, 1962–3 (S.O.).

TABLE 6.4

Details of 'Left Full-time Education' in Table 6.3

	Destination							
	Family Farm	Family Business	Total Family Employment	Non-Family Employment	Not yet at work and other	Un-accounted for	Total	Total Left full time Education[1]
	Percentage Distribution							Number
Boys ...	35·8	9·8	45·6	37·7	7·3	9·4	100	2,179
Girls ...	15·6	8·6	24·2	59·1	11·9	4·8	100	2,062

[1]Estimated from Table 6.3.

TABLE 6.5

Details of 'Non-family Employment' in Table 6.4

	Sector							
	Farm	Industry	Distribution	Transport	Public Service	Other	Total	Total Non-Family Employment[1]
	Percentage Distribution							Number
Boys ...	3·6	36·5	18·2	2·6	4·3	34·8	100·0	821
Girls ...	0·3	27·2	18·8	0·1	16·5	37·1	100·0	1,218

[1]Estimated from Table 6.4.

6.27 The total of about 6,500, two-thirds of whom left altogether, is appreciable in relation to entry figures of about 25,000. We have very little data on these leavers,[23] there is scope here for research. We do not know, for instance, how many of them left on reaching the school-leaving age (14), nor do we know anything about their attainment or ability—except that almost none of them had a post-primary certificate. This is based on the proportion of examinees who return to junior cycle and the proportion who repeat the examination. The fact that they were in secondary school does not tell us a great deal about their ability—the entrance standards vary greatly from school to school, no obvious minimum being enforced. It will be noted that an appreciable number transfer to vocational school—here again we do not know how this is related to curricula, job expectations, fees, etc. It will be seen later that there is practically no movement in the opposite direction.

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[23]cf. Paragraph 6.128 *re* social group composition.

6.28 It will be seen from Table 6.4 that more than half of the boys and a third of the girls who left altogether went to family employment or were not yet at work. This suggests that the lure of profitable employment is only part of the reason for leaving.

6.29 The term ' wastage ' is sometimes applied to such non-terminal leaving but this could be misleading in our case. We do not have direct evidence on which to say whether or not there is great wastage of talent here (but see paragraph 6.128), nor on the other hand can we say that the time they have spent in post-primary school has been wasted, even from a narrow economic viewpoint. The evidence of employer evaluations, though they are of course influenced by supply and demand, is another caution against too free an acceptance of the idea of wastage. For instance the requirement for recruitment as clerk-typists to the Civil Service is seventh standard in the national schools, and it would hardly be argued that a year or two of post-primary education would be wasted in such a post.[24] Similarly, on the vocational side, some government departments advertise for students who have done half of their continuation course.

Secondary Schools: Senior Cycle. Leaving Certificate Examination 1963.

6.30 Each secondary school, and secondary top, was asked to indicate the destinations of those of its pupils who sat the leaving certificate, as ordinary[25] candidates, in 1963. The following is a summary of the percentage distribution indicated—details of the various categories, response rates, etc. are given in the Appendix.[26] The response rates are also referred to in the next two paragraphs.

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[24] It is commonly observed that most of those recruited have obtained intermediate or leaving certificate.

[25] cf. Paragraph 6.55.

[26] Pars. VI.9. *et seq.*

TABLE 6.6

General Destinations of Leaving Certificate Candidates, 1963

GENERAL DESTINATION	All Candidates		Those who obtained Honours Certificate	
	Boys	Girls	Boys	Girls
	PERCENTAGE			
University (Full-time)[1]	26·4	10·4	42·9	18·5
Teacher Training[2]	2·4	7·0	6·9	16·6
Commercial School	2·3	24·8	1·6	17·5
Other Full-time Education ..	11·9	11·8	6·8	9·4
Total in Full-time Education ..	43·0	54·0	58·2	62·0
Religious Life[3]	9·1	6·8	8·2	8·6
Left Full-time Education[4] ..	47·9	39·2	33·5	29·4
Total of Percentages	100	100	100	100
TOTAL NUMBER OF CANDIDATES[5]	5,090	4,696	1,521	1,653

[1] Excluding evening students and others: see Table 6.7.
[2] National teachers, Domestic Science, Physical Education, Froebel, Montessori.
[3] Other than those in preceding categories.
[4] See paragraph 6.33 below.
[5] *Source:* Annual Report (S.O.) 1962/3.

6.31 The school returns of those entering university or teacher training college were verified and completed by comparing data on entrants supplied by the universities and the colleges with the departmental lists[27] of examination candidates and results, giving the following figures, which are those applied in Table 6.6.

TABLE 6.7

Number of Leaving Certificate Candidates, 1963, who entered University (Full-time) or Teacher Training College in 1963

Examination[3] Result	UNIVERSITY[1]				TEACHER TRAINING COLLEGE[2]			
	Honours	Pass	Fail[4]	Total	Honours	Pass	Fail	Total
Boys ..	653	680	13	1,346	105	16	0	121
Girls ..	306	179	3	488	275	49	4	328
TOTAL[5] ..	959	859	16	1,834	380	65	4	449

[1] Full-time (day) students. Excluded are students of Physiotherapy or Radiography, Diploma students other than in Music, students marked 'non-university', e.g., 'Kings Inns Non-University'. Law students marked 'Solicitor's Apprentice' have been included even though some of them may be 'non-university'.
[2] Excluding a few who transferred to university later in 1963.
[3] Leaving Certificate, 1963.
[4] These would presumably have passed the university matriculation examination.
[5] Overall results in the leaving certificate examination were:
Boys: 1,521 Honours, 3,074 Pass, 495 Fail.
Girls: 1,653 Honours, 2,689 Pass, 354 Fail (as in Appendix VI.12).

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[27] Unpublished.

6.32 The rest of Table 6.6 is based on the actual school returns which indicated destinations for about 80 per cent of the remaining candidates, a further 7 per cent being ' unknown '.[28] This means that Table 6.6 is based on information covering just 83 per cent of all the boys and 86 per cent of all the girls.

6.33 The destinations shown are of course only the immediate destinations. This is especially relevant in considering the number who ' left full-time education '. Other data show that a number enter university or training college one or more years after leaving school. This is particularly true of those entering religious life, many of whom become teachers. In 1963 for example, there were 425 university[29] entrants who had sat the leaving certificate examination in 1962 or 1961 (cf. Appendix VI, Table 15). On the other hand, a considerable number entered commercial schools, the courses in which are generally of not more than one year's duration.

6.34 We see from Table 6.6 that only a third of the honours boys left full-time education at that stage. This means that, with our present levels of participation, employers[30] seeking to recruit boys with honours leaving certificates are competing for only about 500 boys in the whole country. From the point of view of these employers, the position would improve with increased entry and increased retention in the secondary schools, but would worsen with an increase in the proportion going on to further education. It could well be then that recruitment policies will have to be modified[31] to meet changing conditions.

6.35 The situation is not much different in the case of the honours girls. The figure of 29.4 per cent (i.e. 486) girls with honours certificates who left full-time education includes 5.5 per cent (i.e. 91 girls) who went to what we may call ' professional apprenticeships ' —nursing etc. The number of girls with honours leaving certificate available for ordinary employment may be estimated as only about 700, including those who went to commercial courses (approximately 300).

6.36 Over 550 girls in all were returned as going to professional apprenticeships—mostly nursing. These are included under ' left full-time education ' in Table 6.6 : see Appendix VI for details. This category was not on the forms but ' nursing ' etc. was written in by many schools. The figures therefore do not purport to be complete —others may have been returned as ' other employment ' for example.

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[28] Details in Appendix VI, Table 10.

[29] N.U.I.

[30] e.g., Executive officers are recruited to the civil service on the results of the leaving certificate examination.

[31] As regards the civil service, a scheme was introduced a few years ago to allow a very few executive officers attend university as full-time students: an appreciable number of serving officers obtain a university degree as evening students. The number of graduate appointments to the general civil service is very small.

6.37. Apart from that category (professional apprenticeships) the number of candidates in general who left full-time education at that stage was 47 per cent of the boys (i.e. 2,386) and 27 per cent of the girls (i.e. 1,286). Adding in the figures for commercial schools for girls (25 per cent or 1,166) gives 52 per cent (i.e. 2,452 girls) or about 5,000 candidates in all.

6.38 The returns indicate (Table 6.6) that 25 per cent of the girls—that is over 1,000 girls—enter commercial schools. We saw earlier[32] that almost as many intermediate certificate candidates did likewise. These are nearly all in non-aided commercial schools and colleges, judging by the enrolment in those colleges (paragraph 6.81). The number of girls returned as going to vocational school on the other hand was only about a hundred[33] (Appendix VI Table 14(a)). It seems surprising that so many of them should go to fee-charging schools rather than avail themselves of the almost free vocational schools. Such commercial courses add to the length and expense of the girls' education. Many of the schools are in the cities so that maintenance costs are often involved also. It may be that private schools are more favoured by private employers, but one suspects that there are other reasons also. Some of the commercial schools are attached to secondary schools, but these courses— typewriting etc.—are not among the subjects recognised for inclusion in the secondary school curriculum.

6.39 Entry to teacher training colleges is discussed in more detail elsewhere in this report.[34] We may note here the high proportion of honours certificants, and the fact that for the girls these colleges figure almost as largely as the university, while for the boys they play a relatively small part.

6.40 An estimated 607 boys (11.9 per cent) and 554 girls (11.8 per cent) went to ' other full-time education ' (details in Appendix VI Table 14 (a)). Of these about 240 boys and 120 girls remained in secondary school, about 75 boys and 100 girls went to vocational school, 110 boys and 30 girls went to a college of technology, 150 girls went to domestic school while 120 boys went to agricultural schools and 120 girls went to education abroad (e.g. to France for a year). The remainder went to schools of art, etc. These numbers are the expanded[35] returns and being so small the expansion may not be appropriate. They must therefore, be treated with caution in particular cases.

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[32] Par. 6.12.

[33] There is a possibility that in some instances the term 'commercial school' may have been interpreted as including commercial courses in vocational schools.

[34] Annexe A.

MATRICULATION REQUIREMENTS

6.41 In considering the proportion who enter university it must be noted that a pass or honours in the leaving certificate does not necessarily qualify one for university matriculation. The requirements for the former are, in general, a pass (40 per cent) in Irish and any four other subjects to obtain a 'Pass'; and honours (60 per cent on honours paper) in three of the subjects to obtain 'Honours'. The minimum requirement for matriculation in the National University is as follows:— passes[36] in (1) Irish,[37] (2) English, (3) a third language, (4) a fourth language (which must be Latin or Greek if not already taken) or mathematics, (5) a fifth language or any other subject of the leaving certificate with the exception of art, drawing, domestic science, physiology and hygiene.[38] We examined the results of a sample of leaving certificate candidates—every tenth number on the list[39]—and found the following number not to be eligible for matriculation:—

TABLE 6.8

Sample of Leaving Certificate Candidates 1963 by eligibility for Matriculation (N.U.I.)

	BOYS				GIRLS			
Leaving Certificate Result	Honours	Pass	Fail[1]	Total	Honours	Pass	Fail[1]	Total
Number in Sample ...	168	295	45	508	167	276	29	472
Number not eligible ...	15	101	45	161	49	177	29	255
Percentage not eligible	9	34	100	32	29	64	100	54
Random Sampling Error[2] (Approx.) ...	2%	3%	—	2%	3·5%	3%	—	2%

[1] These are all ineligible, by definition.
[2] Regarding each column as a random sample.

This suggests that of those with Pass certificates less than 40 per cent of the girls and 70 per cent of the boys would be eligible for matriculation (N.U.I.). Of those with Honours certificates 90 per cent of the boys would be eligible but only 70 per cent of the girls.[40] It will be seen that a person must pass in Latin or Greek or mathematics. But in the 1963 leaving certificate examination no girl took Greek, only 1,473 girls passed Latin and 2,710 passed mathematics, out of a total of 4,696 girls.[41] The implications of the extent to which these matriculation requirements, with their emphasis on languages, influence the curriculum being followed in secondary schools generally will not be gone into here. It may be noted, however, that no number of honours in science subjects, mathematics, history, commerce etc. is of any avail for matriculation if the candidate has not passed in three languages.

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[35] By about a third.

[36] Either in the leaving certificate or the matriculation examination. No distinction is made between pass and honours.

[37] We ignore non-Irish candidates in this argument.

[38] Derived from General Regulations, University College, Dublin, Session 1963/64.

[39] Pass Lists (S.O.). This includes absentees whom we ignore.

6.42 Candidates could, however, obtain a pass in the missing subject or subjects by sitting the matriculation examination itself in summer or autumn 1963, or they might have already obtained such a pass in a previous year—we shall see later[42] that a considerable number sit the leaving certificate examination as special candidates in one or more subjects, possibly for this purpose among others. In the absence of a system of individualised data[43] we do not know how many of the leaving certificate candidates might be eligible for matriculation on this basis. There are, however, reasons for thinking that their inclusion would not substantially alter the results of the previous paragraph. Firstly the number of such persons entering university is quite small, as we shall see.[44] Secondly only about 230 girls and 70 boys passed Latin taken specially as a lone subject in the leaving certificate in 1963: the corresponding figures for mathematics were about 110 boys and 130 girls. These are the commonest subjects lacking for matriculation. This would suggest that the inclusion of such cases would increase the percentage of boys eligible by less than five per cent and girls by less than ten per cent.

6.43 We have seen (Table 6.7) that of the girls with honours certificates almost as many enter teacher training as enter university. It is interesting, therefore, to note here that the minimum requirement for entry to the training colleges for national teachers is as follows: honours in Irish and passes in English, mathematics, history, geography and two other subjects, with singing and, for girls, needlework. If a candidate had a language as one of the other subjects he or she would be eligible for matriculation. It would seem then that a school need not find any serious clash between the two sets of requirements.

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[40] For the result of a detailed examination of the 1962 figures see 'University Selection,' Nevin, M., Irish Times, 26-27 October, 1964.

[41] Annual Report, 1962/63.

[42] Par. 6.55.

[43] cf. *The Use of Individualized Data in Educational Statistics*, Hyland, W. J., O.E.C.D.

[44] Table VI.15.

6.44 The general requirements for matriculating in the University of Dublin (Trinity College) on the results of the leaving certificate examination may be roughly summarised as follows.[45] The subjects passed must include English and either (a) Latin and three other subjects one of which is not a language, or (b) mathematics and three others, one of which is a language. The candidates must have obtained honours in at least two subjects (to obtain an honours leaving certificate one must obtain honours in at least three subjects).

6.45 If we now express the number of leaving certificate candidates, 1963, who entered university in 1963 as a percentage of those eligible[46] for matriculation[47] we get the following: 47 per cent of the Honours boys, 33 per cent of the Pass boys, 25 per cent of the Honours girls, 19 per cent of the Pass girls. The entrants also included a very few who failed leaving certificate in 1963 (Table 6.7).

COMPARISON WITH ENGLAND AND WALES

6.46 The difficulties in the way of international comparisons, which we refer to elsewhere, may be illustrated by seeking to compare those percentages with the figures[48] for school leavers in England and Wales[49] as in Table 6.9. The immediate difficulty is that we have no translator of 'A' level G.C.E. passes into honours leaving certificates, apart from our own impressions. If we compare honours leaving certificate with one or more 'A' levels we see that there is remarkably close agreement in the percentages of boys going to university (44.8 per cent against 42.9 per cent in Table 6.6). However, if we take two or more 'A' levels the percentages diverge rapidly, the choice of standard of comparison being critical. The position is complicated by the appreciable number of Irish university entrants who have only a pass leaving certificate.

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[45] For details, see Dublin University Calendar, 1963-64.
[46] As estimated in par. 6.41.
[47] N.U.I.
[48] Rounded off.
[49] Derived from Statistics of Education, 1962, Part Three (H.M.S.O., London).

TABLE 6.9

England and Wales: School Leavers 1961/62 *with G.C.E. 'A' Level Passes, who entered University*[1]

		Number of Subjects passed at 'A' level				Total
		1	2	3	4 or more	
Boys	Number of School Leavers[2]	5,790	8,770	15,360	5,180	35,100
	Number who Entered University	140	1,890	9,780	3,910	15,720
	Percentage who Entered	2·4%	21·6%	63·7%	75·5%	44·8%
Girls	Number of School Leavers[2]	5,700	6,900	9,140	1,340	23,080
	Number who Entered University	30	670	4,860	970	6,530
	Percentage who Entered	0·5%	9·7%	53·2%	72·4%	28·3%

[1] The number who entered university without any 'A' level passes was very small—230 boys and 70 girls.

[2] With one or more G.C.E. 'A' level passes.

6.47 We have seen from Table 6.7 that boys with pass certificates are more numerous among the entrants than are boys with honours certificates. From paragraph 6.45 we see that the proportion of eligible pass certificants entering university compares quite favourably with that of the honours certificants. This may at first seem remarkable. This situation must be viewed, however, in the context of the existing requirements for university entrance, which, as we have seen, make no distinction between pass and honours. There is thus no great incentive for the pupil who is favourably situated, financially or geographically, to reach more than a pass standard, particularly if his school or family environment places no great premium on intellectual achievement. In short, we do not know how many of the present university entrants would reach honours certificate standard if it were required of them.

6.48 In this connection it is interesting that there is no official information available to the public on the examination results of the pupils in the various schools. Without indulging in such publicity as would exaggerate the importance of examinations, it would seem worth considering whether parents are not entitled to some official information on this facet of a school's activities. Neither is any official information available as to fees, curriculum, staff etc.

UNIVERSITY ENTRANTS, 1963, IN GENERAL

6.49 The proportion of honours leaving certificants among 1963 university entrants with leaving certificate from any year is given in Table 6.10. We confine ourselves for convenience to Irish[50] entrants to the National University as the number of other entrants who take leaving certificate is quite small. This table does not include those who sat leaving certificate earlier than 1961, (83 male, 69 female). They are included in the detailed table in the appendix (Table VI. 15), which also shows those who did not sit for the leaving certificate at all (97 male, 48 female).

TABLE 6.10

National University: Irish[1] Entrants 1963 with Leaving Certificate, showing percentage of Honours Certificants, by College

	Boys		Girls	
Year of Leaving Certificate College	1963	1961–63 (inclusive)	1963	1961–63 (inclusive)
	Percentage of Entrants[2] who had Honours Certificate			
Dublin	45	43	53	49
Galway	48	47	65	63
Cork	55	47	70	65
Maynooth ..	62	62	—	—
All Colleges ..	49	46	60	56

[1] Home residence in the State.
[2] Entrants who sat for the Leaving Certificate in the years shown.

It will be seen that of those entering who had sat the leaving certificate, as had the vast majority of Irish entrants, less than half of the boys had obtained honours in that examination. The Dublin college had the lowest ratio and in all colleges the ratio was worsened by the inclusion of the entrants from 1962 and 1961 (Maynooth had none of the latter).

6.50 It is of interest to consider the proportion of honours certificants among entrants to each faculty as shown in the following table.

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[50] Home residence in the State.

TABLE 6.11

N.U.I. Entrants, 1963: Percentage of Entrants who had Honours Leaving Certificate by College and Faculty

University College / Faculty[1]	Boys					Girls
	Dublin	Galway	Cork	Maynooth	All Colleges	All Colleges
	Percentage of entrants[2] to Faculty who had honours certificate					
Agriculture ..	30	44	24	—	32	—*
Architecture ..	26	—	—	—	26	—*
Arts	48	45	42	62	49	62
Commerce ..	25	36	29	—	27	63
Engineering ..	85	80	80	—	83	—
Law	20	—	—*	—	20	17
Medicine including Dentistry	29	31	25	—	28	44
Science	62	45	71	—*	61	68
Pharmacy ..	27	—	—	—	27	58
Social Science ..	—*	—	—	—	—*	21
Veterinary Medicine ..	14	—	—	—	14	—
Dairy Science ..	—	—	41	—	41	—
All Faculties ..	43	47	47	62	46	56

[1] or sub-faculty.
*small numbers.
[2] Entrants who sat for leaving certificate, 1961–63.

It will be seen that entrants to Engineering have easily the highest proportion of honours certificates, appreciably more than the next highest, Science. All of the other faculties attract less than half:[31] Arts is just under the 50 per cent but all the others have less than a third—Medicine, Commerce, Architecture, Law, Veterinary Medicine etc. The reasons why people gravitate towards particular faculties are a fit subject for research. It is doubtful whether career guidance plays its proper part in these decisions.

LEAVING CERTIFICATE 1963: LEFT FULL-TIME EDUCATION

6.51 From Table 6.6 we see that 47.9 per cent of the boys and 39.2 per cent of the girls were returned in the category 'left full-time education'. This includes 1 per cent of the boys and 11.8 per cent of the girls who entered 'professional apprenticeships'—nursing etc. The remainder were distributed as follows—(details of returns in Appendix VI. Table 14 (c).

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[31] Boys.

TABLE 6.12

Leaving Certificate, 1963: Percentage Distribution of 'Left Full-time Education' in Table 6.6

(Other than Professional Apprenticeship)

Employment[1]	Male	Female	Total
		Percentages	
By own family:			
on farm	7·2	6·5	6·9
in business	7·6	5·5	6·8
Total Family Employment	14·8	12·0	13·7
Farm	0·4	0·6	0·5
Industry	19·5	6·8	14·8
Distribution	5·2	3·7	4·6
Transport	3·4	0·7	2·4
Public Service[2] (other than Industry) ..	16·7	37·4	24·4
Other Employment	28·9	26·3	27·9
Total Non-family Employment ..	74·1	75·5	74·6
Other (illness, emigration, etc.[3])	11·1	12·5	11·7
Total of Percentages	100·0	100·0	100·0
		Number	
Total of such Candidates[4]	2,386	1,286	3,672

[1] Apprenticeships were to be specially indicated but the number thus indicated in the returns was so small (33 boys, 9 girls) that they are not shown separately here.

[2] Including those returned as 'army'.

[3] See paragraph 6.52.

[4] Estimated, Table 11, Appendix VI.

6.52 As a measure of the lack of employment among these leavers one can take the figure for 'Other' in Table 6.12 i.e. 11.7 per cent of the 3,672 who left full-time education at that stage, i.e. only 4.4 per cent of all leaving certificate candidates (9,786). The category 'Other (includes illness, marriage, emigration etc. or death)' was intended to cover 'not-yet-at-work' which was often written in by the school. However, some of those returned as in family employment (family farm or business) may be in a sense 'unemployed'. To include all of this latter category (13.7 per cent of the 3,672) would more than double the above measure of lack of employment.

6.53 The proportion returned as 'Other Employment' in Table 6.12 may perhaps have been exaggerated by difficulties of interpretation. There was evidence here, as in the intermediate certificate returns, that a breakdown by occupation would probably be easier for the girls' schools, particularly as regards clerical workers.

6.54 It is noted[52] that the 'aim of the leaving certificate is to testify to the completion of a good secondary education and to the fitness of a pupil to enter on a course of study at a university or an educational institution of similar standing.'

LEAVING CERTIFICATE 1963: SPECIAL ENTRANTS

6.55 Another aspect of the leaving certificate examination must be adverted to here. Only those candidates who are entered in the ordinary way from secondary schools or secondary tops are eligible for the award of the leaving certificate as such: the published results and the preceding paragraphs refer only to those. However the examination itself, but not the certificate, is open to all on payment of a fee. A considerable number (840 boys and 950 girls in 1963) other than such as are accounted for above do in fact sit the examination under this rule.[53] These are known to include secondary school pupils entered for one or two subjects from the first year of the senior cycle who would sit it again next year, ex-secondary school pupils in employment, pupils of private commercial colleges, persons seeking passes in one or more subjects to fulfil the entry requirements of professional institutes etc. An exact analysis of the composition of this group would be extremely tedious. As just half of them enter individually from private addresses[54] it was not considered practicable to include them in the survey. An analysis[55] of the results achieved by the corresponding group in 1962, however, supplied by the Department, shows that of about 1,400 in that year less than 400 obtained results equivalent to a pass ('equivalent passes'). The great majority of the others presented for less than the normal minimum of five subjects: indeed many presented for only one subject.[56] The number obtaining honours marks in the individual subjects was very small[57]. It is not possible, in practice, in the absence of an individualised data system,[58] to ascertain how many complete the equivalent of a pass by sitting the examination in various years, as equivalent passes are not recorded by the Department. Equivalent passes are recognised by certain outside bodies such as the universities, as are passes compounded of leaving certificate and matriculation subjects. Of the corresponding 1963 group only a very small number were found to have entered university in 1963.[59] To summarise, while many aspects of this phenomenon remain to be analysed it seems hardly likely that such analysis would change our general results once we have made due allowance for the number of equivalent passes. We take 300 as the number of those obtaining equivalent passes in 1963 who left full-time education in that schoolyear, including two other small groups of examinees mentioned in Appendix VI. paragraph 12.

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[52] Rules and Programme for Secondary Schools, 1962-63 (S.O.).

[53] Rule 76, Rules and Programme for Secondary Schools (S.O.).

[54] Table 17 (*a*), Appendix VI.

[55] Table VI.17 (*b*).

[56] Derived from Pass Lists, 1962 (S.O.).

[57] Table VI.17 (*c*).

[58] cf. Paragraph 6.42, footnote 43.

[59] N.U.I. Entrants: Equivalent passes: 15 boys (4 with honours), 7 girls; and approximately 10 boys and 10 girls without passes, excluding some repeating the examination.

MATRICULATION EXAMINATION

6.56 As regards university matriculation certificates, of recent years only a small number of Irish candidates obtain the certificate of the National University without having sat the leaving certificate examination, according to information supplied by the Registrar. In 1962, for example, of the 3,483 (Irish and non-Irish) who obtained matriculation certificates, only 766 had passed the matriculation examination itself and the great majority of the latter are understood to have sat the leaving certificate examination also. The number, therefore, who obtained this certificate in 1963 who are not accounted for in the preceding paragraphs or who are counted as 'Fails' can hardly exceed a few hundred.[60] This is supported by the figures for university entrants (Table VI.15).

OTHER SENIOR CYCLE LEAVERS

6.57 The number of senior cycle pupils who left during or at the end of the schoolyear 1962/63 without sitting for the leaving certificate in the ordinary way in 1963 is estimated (as explained in Appendix VI, paragraph 11), to be approximately 1,900 (800 boys, 1,100 girls). The response to this part of the survey was poor, accounting for only 360 boys and just 500 girls, probably owing to unfamiliarity with such terminology as 'leaving certificate cycle'. There was also an element of ambiguity here as some of these would doubtless figure among the special examination candidates mentioned in paragraph 6.55. The returns[61] show 60 per cent entering employment—the most prominent being nursing and public service for the girls and family farm or business for the boys—and 25 per cent remaining in full-time education, half of which was university for the boys[62] and commercial school for the girls. Of those leaving full-time education about 6 per cent had leaving certificate or equivalent, 74 per cent had intermediate certificate and 20 per cent were returned as having none of these certificates.

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[60] The number of Irish students sitting the Trinity matriculation examination is quite small; and similarly for the College of Surgeons. For instance the number of Irish entrants to Trinity College in 1963 who had not sat the leaving certificate examination in 1963 was only 139 (102 boys, 37 girls). (Data supplied by University.)

[61] cf. Appendix VI, Table 19.

[62] These had leaving certificate from a previous year or its equivalent.

6.58 We have not analysed the general leaving certificate returns by other factors, such as location. The missing schools are much the same as those for the intermediate certificate returns.

VOCATIONAL SCHOOLS

Continuation Courses: Day Group Certificate 1963

6.59 Turning to the vocational schools, we consider firstly the group certificate examinations, which may be thought of as the vocational school counterpart to the intermediate certificate examinations. A difficulty here was that while the official results are given in terms of the number of certificates issued, some candidates may receive more than one certificate. It was first necessary then, for our purposes, having recourse to the original result sheets, to ascertain how many individuals had passed (obtained one or more certificates) and how many had failed (obtained no certificate). These unduplicated results[63] were used to check the returns from the schools, which accounted for 4,300 boys (89.2 per cent) and 3,126 girls (90.2 per cent), excluding a few returns which were not used owing to inconsistencies, and excluding 97 boys and 49 girls who were not accounted for in the returns received—about half of these had failed. The general distribution of destinations was as follows, in percentage form, (details of the returns are given in Appendix VI, Tables 20 and 21).

TABLE 6.13

General Destinations of Group Certificate Candidates 1963, by Examination Result

(Percentage Distribution)

Examination Result General Destination	Boys			Girls			TOTAL
	Pass	Fail	Total	Pass	Fail	Total	
	Percentage						
Vocational School	23·6	31·7	25·9	37·5	38·8	37·9	30·9
Agricultural School[1] ..	1·6	1·1	1·4	2·1	0·7	1·8	1·6
Other Full-time[2] Education ..	1·6	0·7	1·4	4·3	2·0	3·6	2·3
Left full-time Education ..	73·2	66·5	71·3	56·0	58·5	56·7	65·2
Total of Percentages ..	100·0	100·0	100·0	100·0	100·0	100·0	100·0
	Number						
Total Candidates (unduplicated)	3,397	1,422	4,819	2,516	948	3,464	8,283

[1] Including domestic science schools in some cases.

[2] Hotel training schools, domestic, commercial, secondary, etc. Only 5 boys and 10 girls in all were returned as going to secondary school.

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[63] Shown in last line of Table 6.13.

6.60 The movement into other education is quite limited. This might be due among other things to institutional rigidity, specialised curricula etc. At present then a person who starts in a vocational school is very unlikely to enter another division or indeed, as we shall see, to reach the higher levels of technical education. Against that background it is unlikely that these schools attract their proper share of the better pupils and these handicaps must be borne in mind in any assessment of the work of the vocational schools.

6.61 Again it must be remembered that these are only the immediate destinations. For example ' Vocational School ' means that a pupil returned to a vocational school after the summer of 1963 but it gives no indication how long he may have stayed.

6.62 The following was the percentage distribution of those in ' left full-time education ':—

TABLE 6.14

Group Certificate, 1963—Percentage Distribution of 'Left Full-time Education' in Table 6.13

Result Destination	Boys			Girls			TOTAL
	Pass	Fail	Total	Pass	Fail	Total	
	Percentage						
Family farm	9·5	17·2	11·6	8·5	11·2	9·3	10·7
Family business	2·3	3·7	2·7	1·6	3·6	2·2	2·5
Total Family Employment	11·8	20·9	14·2	10·2	14·9	11·5	13·2
Farm	1·5	2·5	1·8	0·2	0·6	0·3	1·2
Industry	48·1	30·3	43·4	24·1	13·3	21·0	35·2
Transport	1·5	1·7	1·5	0·8	1·0	0·8	1·3
Distribution	4·2	7·4	5·0	14·7	15·1	14·8	8·6
Public Service[1]	4·7	2·2	4·0	12·9	5·0	10·7	6·5
Other Employment ..	14·6	13·4	14·3	28·5	31·1	29·2	19·8
Total Non-family Employment	74·5	57·5	70·0	81·2	66·1	76·9	72·5
Unaccounted for	5·7	9·6	6·7	1·3	2·8	1·7	4·9
Not yet at work and other[2]	8·0	11·9	9·1	7·3	16·3	9·8	9·3
Total of Percentages ..	100·0	100·0	100·0	100·0	100·0	100·0	100·0
	Number						
TOTAL[3]	2,487	946	3,433	1,409	555	1,964	5,397

[1] Industrial enterprises included under 'industry'.
[2] Includes illness, emigration, etc., or death.
[3] Estimated from Table 6.13.

6.63 While, in Table 6.14, only 9.3 per cent are returned as 'not yet at work' there was a further 13.2 per cent in family employment and 4.9 per cent unaccounted for, so that the percentage really 'unemployed' might be over 20 per cent. Of the sectors, Industry predominates, all the others being very much smaller—Transport and Farm being the lowest. The high proportion returned as 'other employment' suggests that in some cases allocation by sector may have been misunderstood, particularly in the case of the girls.

6.64 It is interesting to find so many remaining in vocational schools as this examination had been thought of as a terminal one. Over a quarter of the boys and a third of the girls stayed on—and this was largely independent of result. It will be seen later that very few of these entered technical (senior) courses. It would appear to indicate either a lack of employment opportunities for these students or a demand for something more than the ordinary two years' course. It would seem appropriate that further study should be made of the return to vocational schools of so many candidates, particularly as it appears to imply a demand for more than the normal two years' course. It is not known how many take the examination after only one year but the proportion is thought to be quite small—the median age of candidates has been estimated from a small sample to be about 15 years 9 months. Neither do we know how permanent the return is, but some indication of this is given by the estimated figure of 7½ per cent who repeat the examination. That the return is largely independent of success or failure at the examinations is also clear from Table 6.13. Tables VI. 20, 21 in the appendix show that the return is related to the group of subjects taken at the examination—far less of the secretarial group (girls) returning. (This course is generally a three-year one.) This possibly reflects favourable employment prospects for the secretarial group—although the number involved is admittedly much smaller—a higher proportion of them obtaining non-family employment (more than a third of them enter the Public Service). There is also wide variation from county to county in the percentage of those leaving.

OTHER LEAVERS FROM VOCATIONAL SCHOOL (CONTINUATION COURSES)

6.65 In order to calculate the total number of leavers from the vocational schools (continuation) we needed to know the number of entrants. As part of our survey details of entrants for each of the five years 1959/63 were sought.[44] Returns were received from all committees save one and that being small its data were estimated. The returns were checked for consistency and proved satisfactory, apart from a small change in one case. We feel confident that the figures are reliable. The 1963/64 figure was 16,014 made up of 9,154 boys and 6,860 girls.

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[44] Appendix III.B.

6.66 Combining this with the figures for the stock—as in paragraph 6.25 for the secondary schools—gives the total leavers, as follows—

TABLE 6.15

Estimated Total Leavers from Vocational Schools (Continuation Classes) 1963

	Boys	Girls	Total
1962/63 Enrolment[1]	15,370	11,858	27,228
1963/64 Entrants	9,154	6,860	16,014
Sum ..	24,524	18,718	43,242
1963/64 Enrolment[2]	16,280	12,689	28,969
Total Leavers	8,244	6,029	14,273
Examinee Leavers[3]	3,572	2,151	5,723
Total Non-examinee Leavers ..	4,672	3,878	8,550

[1] February Census, 1963.
[2] February Census, 1964.
[3] As estimated (Table 6.13).

This of course gives the leavers between February, 1963, and February, 1964, rather than in the schoolyear 1962/63. The aggregate individual enrolments for 1962/63 and 1963/64 as given in the Annual Reports were not used in this table (i) because the 1963/64 figure was not available at the time the forms were processed and (ii) the enrolment figures are not shown separately for boys and girls. If the Annual Report figures are used, the non-examinee leavers are some 800 less than shown in table above.

6.67 The schools were asked for aggregate returns for the non-examinee leavers in the schoolyear 1962/63. The response covered schools with about 95 per cent of the total enrolments. The totals shown in the returns (4,869 boys, 4,423 girls, 9,292 in all) actually exceeded our estimate of the previous paragraph by 742 or about 9 per cent, which is probably an accumulation of small errors. It would appear that an estimate of 8,550 as a total is the more reliable. The details were as follows:—

TABLE 6.16

Destinations of Leavers from Vocational Schools (Continuation) 1962/63

(*Other than Group Certificate candidates* 1963)

(School Returns, not amended)

		Total Leavers	Destination		
			Secondary School	Other School	Left Full-Time Education
Boys	With Group[1] Certificate ..	610	—	18	592
	Without ..	4,259	35	36	4,188
Girls	With Group[1] Certificate ..	715	3	35	677
	Without ..	3,708	48	57	3,603
	TOTAL ..	9,292[2]	86	146	9,060

[1] From a previous year.
[2] The estimated total is 8,550.

6.68 As the estimate of 'examinee leavers' in Table 6.15 is unlikely to be too high, we take the estimate of 8,550 for the total non-examinee leavers, the figures in Table 6.16 to be scaled down accordingly (by about 8 per cent).[65] We note also that about 1,300 had a group certificate from a previous year, which tallies with our earlier estimates of the number of certificants remaining in school. Allowing for some 'fails' from the previous year, this would give a figure of about 7,000 students leaving continuation classes in that year without having sat the group certificate examination. Very few would have a secondary school certificate.[66]

6.69 This lower figure is strikingly high for a two year course with entry figures of about 16,000 and moderate fees. The rate of leaving is highest in the county boroughs and in the urban schemes where travel would not be a deterrent. Our remarks about the corresponding leavers from the secondary schools[67] apply with even greater force here.

6.70 Almost all of these non-examinee leavers left full-time education; the returns for their employment status were as follows:—

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[65] The estimate based on Annual Report figures is somewhat lower. See paragraph 6.66.
[66] Paragraph 6.14.
[67] Paragraph 6.27.

TABLE 6.17

Details of 'Left Full-Time Education' in Table 6.16

	Not yet at work etc.	Family Farm	Family Business	Farm	Industry	Distribution	Transport	Public Service	Other Employment	Total Number[1]
	PERCENTAGE DISTRIBUTION									
Boys	10·5	25·8	3·1	4·2	30·9	10·4	—	3·3	11·8	4,780
Girls	13·7	11·1	4·2	—	22·4	21·3	—	6·8	19·5	4,280

[1] These figures should be scaled down by about 8 per cent.

ENTRIES TO VOCATIONAL SCHOOLS

6.71 We have seen earlier that an appreciable number of pupils move into vocational schools from secondary schools while the reverse flow is quite negligible. As a check on these figures, the vocational schools were asked to name the schools from which their entrants had come—for a 10 per cent sample. Unfortunately the name of the school was not always sufficient to show whether it was primary or secondary and entrants from these are listed as 'doubtful' in the following table. The original number of 'doubtful' was more than twice this but this was reduced on the basis of the returns from primary schools—Form D1.

TABLE 6.18

Sample of Entrants to Vocational Schools, 1963/64

Total Entries	School last attended by sample			Entrants from 'school uncertain' by year of birth			
	National School	Secondary School	School Uncertain	1947	1948	1949	1950
16,014 ..	1,313	179	89	20	26	31	12

The 179 would give an aggregate of 2,200 compared with the figure of about 2,800 derived from the secondary schools forms. It would seem reasonable to take a figure of 2,400 by ascribing 15 of the 'doubtfuls' to secondary. There is an element of doubt here however, as the age is not a certain guide—the median age of national school entries for example is 14 with the range going as high as 16 (derived from national school returns). This figure of

2,400 from secondary schools means that the entry from national schools was 13,600.

6.72 A survey was also carried out of the qualifications of the entrants, using the same sample. The response was about 80 per cent and showed the following percentage distribution :—

TABLE 6.19

Certificate Status of Entrants to Vocational Schools 1963/64

	Certificate held						Total Entrants
	Primary	Intermediate or Leaving	Other	None	Not Known	Total	
	Percentage distribution						
Boys	66·9	2·5	0·1	23·3	7·2	100	9,154
Girls	66·7	6·4	0·2	23·9	2·8	100	6,860

This suggests that almost a quarter of the entrants (i.e. about 4,000 students) had not obtained a primary certificate. This emphasises what we said earlier[**] about the handicaps under which the vocational schools labour.

NON-AIDED PRIMARY SCHOOLS

6.73 The attempt to analyse the leavers from non-aided primary schools was not successful. The main reason was probably confusion between 'establishment' and 'enterprise'—pupils who moved from such a school to the attached secondary school not being returned as leavers at all. It would seem reasonable, however, to assume that the flow out of education from non-aided primary is negligible. On the basis of the stock figures obtained from the censuses[**] in February, 1963 and 1964, we take 2,050 (950 boys and 1,100 girls) as the number entering post-primary schools (in this case secondary) from non-aided primary schools in 1963, and we use this figure in what follows (see Appendix VI, paragraph 16).

NATIONAL SCHOOL LEAVERS

6.74 Since children enter national school at the age of 4-6 and leave about ten years later, it will be appreciated that there can be a large outflow owing to emigration and death. Although actual entry figures are not available it is possible to estimate the flows into or out of each standard by using the published[70] data on promotions from one standard to another. We found that for 1961/62 the number leaving national schools from fourth standard or higher was about 54,500, excluding the estimated leavers from secondary tops. This tallies with what one would expect from general considerations: taking one year with another the total leavers from the primary cycle should more or less equal a cohort aged about 13. At the 1961 Census of Population there were 58,465 persons aged 13 (30,018 boys, 28,447 girls). Deducting the estimated number of leavers from the non-aided schools (2,050—previous paragraph), and allowing for numbers in various categories of special schools, we arrive at a figure of about 55,000 which we take as the number of leavers from national schools, from fourth standard or higher (excluding secondary tops) in the schoolyear 1962/63.

[**] Par. 6.60.
[**] Chapter 1.

6.75 Of those, 21,700 are estimated to have gone to secondary school (official entry figure of 23,700 less 2,000 from non-aided primary), 2,200 to secondary tops, and 13,600 to vocational schools (gross entry 16,000 less 2,400 from secondary schools—paragraph 6.71). Assuming that only a negligible number went to other schools, that would give 17,500 as having left full-time education at that stage.

6.76 Our survey referred to 10 per cent of all leavers from national schools (excluding secondary tops) but the response accounted for only 4,107 or 75 per cent of the expected sample. Of these 1,748 went to secondary school or secondary top (i.e. 75 per cent response), 1,205 went to vocational or other school (about 85 per cent response) and 1,154 left full-time education (66 per cent response). Thus this last category is not as well represented in our sample as are the other two. The largest urban schools were also somewhat under-represented.

6.77 It was decided not to ask for the certificate status of leavers. However, when we referred to the Department's lists[71] of examination results we found ourselves in some technical difficulties—school numbers had changed and we were unable to trace some schools. The following table shows the results of our analysis in percentage form:—

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[70] Annual Reports of the Department of Education.
[71] Unpublished.

TABLE 6.20

National School Leavers, 1962/63

Primary Certificate-Status of those who left Full-Time Education

	Primary Certificate result				Total of Percentages	Total who left full-time education[1]
	Pass	Fail	Absent	No Trace		
	Percentage Distribution					
Boys	26	7	10	57	100	9,507
Girls	30	10	11	49	100	7,952
Total	28	8	10	53	100	17,459

[1] As estimated in paragraph 6.75.

6.78 A word of explanaton will be in order here. The heading 'no trace' means that the names of those candidates could not be located on an examination list in any of the three years 1963, 1962, 1961 (in some cases the school list was untraced). As the Department's regulations prescribe that in general all pupils in the sixth standard at a certain stage of the year must be entered on the examination lists, the above result suggests that these pupils left school without having reached or without having completed sixth standard. Applying the percentage (53 per cent) to the calculated total of 17,500 gives a figure of roughly 8,000 persons in this category in 1963. The figures for Dublin are on a par with those for the rest of the country and are not shown separately. Indeed there was remarkable uniformity throughout the country.

6.79 Although this figure is undoubtedly exaggerated, the annual emergence of such a large number of young people who apparently have not reached what is commonly considered a minimum level of education, can hardly be viewed with equanimity. The above figure may include some who would have been eligible for entry to the special schools for mentally handicapped children (these schools at present have about 2,500 pupils) but this would hardly account for an appreciable proportion of them.[72] Nor are errors arising from pupils changing schools after examination entry thought to be of consequence. Figures for other years were not asked for in the survey as it was not thought practicable, but there is no reason to think that 1963 was exceptional in this respect. This view is supported by the figures in the Department's Annual Report for

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[72] See Report of the Commission of Enquiry on Mental Handicap, Chapter 3, 1965 (Pr. 8234).

1959/60 of the numbers of pupils of age 14 who have not yet reached sixth standard. A general discussion of the relationship of age to standard in the National Schools may be found in Chapter 9.

6.80 There are the further 18 per cent who failed or were absent from the examination. This would mean perhaps a further 3,000 persons who do not have a primary certificate, making about 11,000 in all who left the national schools without this certificate. In view of the apparent seriousness of this phenomenon it would seem to merit full examination.

OTHER SCHOOLS

6.81 Private commercial and secretarial schools—61 in number—had an aggregate enrolment of 155 boys and 2,029 girls on 1 February, 1963, mainly in the age range 15 to 20. The number leaving annually is probably about 2,500: perhaps 1,000 would have a leaving certificate and 1,000 an intermediate certificate. The outflow from various other schools (residential schools of domestic economy, agriculture etc.) is small numerically.

UNIVERSITY LEAVERS

6.82 For a variety of reasons, technical and otherwise, this survey was not extended to include leavers from the universities. The number of degrees awarded in 1963 is given in Table 6.21, which is taken from the Statistical Abstract, 1964 (Central Statistics Office). Owing to the lack of compatible statistics, however, it was not found possible to estimate the number who leave without a degree or diploma.

TECHNICAL COURSES

6.83 The output of the technical courses is discussed in detail in chapter 8, in relation to the output of technicians.[73] The output of the whole-time courses is of the order of 300 a year, the qualifications covering a wide range—hotel chef, A.M.I. Mech.E., A.R.I.B.A. etc. The entries to wholetime technical courses for 1963/64 (apart from the commercial courses in the College of Commerce, Rathmines) are shown in the following tables 6.22 and 6.23. Since not all these are direct entrants from other full-time education they are not all accounted for in the flow pattern in Table 6.24. It will be noted that they do not include the Army school in Naas. The courses listed in Table 6.23 may be regarded broadly as requiring a leaving certificate or similar entry qualification: most of these courses lead to technological qualifications and may be regarded as third level non-university.

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[73] The information collected by us on examination results and destinations is summarised in Appendix VI, Table 22.

6.84 These tables do not claim to be complete. Only courses in respect of which returns were made have been included.

TABLE 6.21

Degrees Conferred in each Faculty in the Universities[1] in the Academic Year, 1962/63

Faculty	First Degrees				Higher Degrees[2]		TOTAL
	Honours		Ordinary				
	Male	Female	Male	Female	Male	Female	
Architecture ..	—	—	7	—	—	—	7
Agriculture, Forestry and Horticulture ..	8	—	53	—	4	—	65
Veterinary Medicine	2	—	42	—	1	—	45
Arts	211	93	425	263	44	17	1,053
Commerce	38	7	117	34	12	1	209
Dairy Science.. ..	2	—	6	—	4	—	12
Social Science ..	—	—	14	24	—	—	38
Dentistry	—	—	38	5	1	—	44
Engineering	53	—	80	—	7	—	140
Medicine	8	1	129	28	19	3	188
Science	115	37	102	48	61	12	375
Law	11	1	21	3	3	—	39
Divinity	—	—	—	—	1	—	1
Total Degrees 1962/63	448	139	1,034	405	157	33	2,216

Source: Statistical Abstract, 1964.

[1] Excluding Maynooth and College of Surgeons. The figures for Maynooth are 114 degrees—81 in Arts and Science, 3 in Canon Law, 13 in Philosophy, 17 in Theology. Eight of these were higher degrees—5 in Philosophy and 3 in Theology. The figures for College of Surgeons are 100 first degrees and 10 higher degrees.

[2] Excluding higher degrees granted without further study.

TABLE 6.22

Entrants to Full-Time Day Technical Courses, 1963/64 by Course and Centre

Area	Centre	Course	Male	Female	TOTAL
Dublin City ..	Kevin Street	Opticians	7	3	10
		Senior Science	37	1	38
	Bolton Street	Architectural Technology ..	7	9	16
		Automobile Technology ..	7	—	7
		Building Technology ..	18	—	18
		Preliminary Engineering ..	37	—	37
		Aircraft Technicians ..	12	—	12
		Engineering Draughtsmanship	8	—	8
	Cathal Brugha Street	Household Management ..	—	30	30
		Hotel Cookery ..	—	24	24
		Chef Apprentices	12	—	12
Cork City ..	Crawford M.T.I.	Marine Engineering	16	—	16
		Engineering Technology ..	27	—	27
	School of Art	Art	2	2	4
Limerick City	School of Art	Art	7	5	12
Waterford City	School of Art	Art	1	3	4
Co. Galway	Foras Ostachais Mhuire	Commis Chefs and Waiters ..	19	—	19
		Total ..	217	77	294

TABLE 6.23

Entrants to Full-Time Technological and other[1] Third Level Courses 1963/64 by Centre and Course

Area	Centre	Course	Male	Female	TOTAL
Dublin City ..	Kevin Street	Electrical Engineering ..	12	—	12
		Science (Inter. B.Sc.) ..	7	1	8
	Bolton Street	Health Inspector's Diploma ..	8	—	8
		Architecture ..	32	4	36
		General Surveying	21	1	22
		Quantity Surveying ..	24	—	24
		Diploma in Engineering ..	26	—	26
	Cathal Brugha Street	Institutional Management ..	—	19	19
		Hotel Management	10	12	22
Cork City ..	Crawford	Industrial Science	15	3	18
		Marine Engineering ..	9	—	9
Co. Clare ..	Shannon	Hotel Management	13	9	22
		TOTAL ..	177	49	226

[1] There were also 53 entrants (39 male, 14 female) to a one year pre-university course in Kevin Street.

SUMMARY

6.85 On the basis of the foregoing the following tables have been drawn up to show the flow pattern for those divisions in the school year 1962/63. The fact that some left school between autumn 1962 and summer 1963 introduces an element of ambiguity but it is not thought that this materially affects the general picture. Flows from standards lower than fourth in the national schools are not shown. The tables do not show the complete output in as much as drop out from third level for example is not allowed for. The complete output of certificants is used in chapter 8, in which chapter the implications of the certificate status of the output will be discussed.

TABLE 6.24

Educational Sector Flow Pattern 1963 *(excluding Third Level)*

Total Boys and Girls

References in text to Paragraphs and Tables	From ↓ / To →			Secondary (including Secondary Tops)		Vocational		Commercial	University	Teacher Training	Other[4] Full-time Education	Total in Full-time Education	Left Full-time Education					TOTAL
				Junior	Senior	Continuation	Whole-time Technical						Total	Certificate Status: No Post-primary	Group	Intermediate	Leaving	
Par. 6.73	Non-aided Primary			2,050								2,050						2,050
Par. 6.74	National School			23,936		13,605						37,541	17,459	17,459				55,000
Par. 6.11	Secondary (including Secondary Tops)	Junior Cycle	Inter. Cert. 1963 Examinees	[1,450][1]	12,960	675	50	1,0[illegible]			250	16,422	1,846	536		1,310		18,268
Par. 6.25			Others ...		250	1,530	30	—[6]			500	2,400	4,400	4,200		200		6,800
Par. 6.30		Senior Cycle	Leaving Cert. 1963 Examinees		[362][1]	104	250	1,294	1,834	440	1,224[7]	5,507	4,270			500	3,770	9,796
Par. 6.57			Others ...			100	70	200	120		25	515	1,423			1,223	200	1,938
Par. 6.50	Vocational	Continuation	1963 Group Cert. Examinees	—		[2,485][1]	75				323	2,883	5,400	1,400	3,895	105		8,283
Par. 6.65			Others ...	100	—		—				125	225	8,325	7,025	1,300			8,550
Par. 6.83		Whole-time Technical		—	—	—	—	—	—	—	—	—	—[8]					—[8]
Par. 6.81	Commercial											—	2,500	375		1,050	1,075	2,500
	Total Entrants from within sector, 1963			26,086[2]	13,210[3]	16,014	475[5]	2,504[5]	1,954[5]	440[5]	2,545[5]	—	45,623	30,995	5,195	4,388	5,045	—

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[1] Internal flows, shown to balance total examinees. [2] Secondary 23,730 (A.R. 1963–64, prior to publication. Secondary Tops 2,356 (Estd. par. VI 7.).
[3] Secondary 12,789 (*ibid*) Secondary Tops 584 (*ibid*) Total 13,373 includes repeats. [4] Includes Hotel Training Schools.
[5] Direct entrants, only, not total entrants. [6] Included in 'Other'. [7] Includes 782 in Religious Life.
[8] The output of the whole-time technical is discussed in detail in a later chapter (8).

TABLE 6.25

Educational Sector Flow Pattern 1963 (excluding Third Level)

Total Boys

From ↓		To →	Secondary (including Secondary Tops)		Vocational		Commercial	University	Teacher Training	Other Full-time Education	Total in Full-time Education	Left Full-time Education					TOTAL
												Total	Certificate Status				
			Junior	Senior	Continuation	Whole-time Technical							No Post-primary	Group	Intermediate	Leaving	
Private Primary			950								950						950
National School			11,073		8,020						19,093	9,507	9,507				28,600
Secondary (including Secondary Tops)	Junior Cycle	Intermediate Certificate 1963 Examinees ...	[750]	6,306	255	25	40			60	7,436	818	343		475		8,254
		Others ...		150	800	15				200	1,165	2,348	2,248		100		3,513
	Senior Cycle	Leaving Certificate 1963 Examinees ...		[242]	54	150	118	1,346	121	621[1]	2,652	2,438			338	2,100	5,090
		Others ...			25	30		110		10	175	650			550	100	825
Vocational	Continuation	1963 Group Certificate Examinees ...			[1,200]	50				130	1,380	3,436	900	2,486	50		4,816
		Others ...	50							50	100	4,325	3,725	600			4,425
	Whole-time Technical[2]		—	—	—	—	—	—	—	—	—	—[2]	—	—	—	—	—
Commercial			—	—	—	—	—	—	—	—	—	150	25	—	50	75	150
Total Entrants from within Sector in 1963 ...			12,073	6,456	9,154	270	158	1,456	121	1,102	—	23,672	16,748	3,086	1,563	2,275	—

[1] Including 463 in religious life. [2] cf. chapter 8.

TABLE 6.26

Educational Sector Flow Pattern 1963 (excluding Third Level)

Total Girls

From ↓		To →	Secondary (including Secondary Tops)		Vocational		Commercial	University	Teacher Training	Other Full-time Education	Total in Full-time Education	Left Full-time Education					TOTAL
													Certificate Status				
			Junior	Senior	Continuation	Whole-time Technical						Total	No Post-primary	Group	Intermediate	Leaving	
Private Primary			1,100								1,100	—					1,100
National School			12,863		5,585						18,448	7,952	7,952				26,400
Secondary (including Secondary Top)	Junior Cycle	Intermediate Certificate 1963 Examinees ...	[700]	6,661	420	25	990			170	8,966	1,028	193		835		9,994
		Others ...		100	730	15				390	1,235	2,052	1,952		100		3,287
	Senior Cycle	Leaving Certificate 1963 Examinees ...		[120]	50	100	1,156	488	328	603[1]	2,845	1,841			171	1,670	4,686
		Others ...			75	40	200	10		15	340	773			673	100	1,113
Vocational	Continuation	1963 Group Certificate Examinees ...	—	—	[1,286]	25	—			190	1,500	1,984	500	1,400	85		3,484
		Others ...	50			—				75	125	4,000	3,300	700			4,125
	Whole-time Technical ...																
Commercial												2,350	350		1,000	1,000	2,350
Total Entrants from within Sector in 1963 ...			14,013	6,761	6,860	205	2,346	498	328	1,443	—	21,980	14,247	2,100	2,864	2,770	—

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[1] Including 319 in the religious life.

PART II—PARTICIPATION

INTRODUCTION

6.86 Having considered the pattern of the supply produced by the educational sector at present (1963), we next consider whether there are grounds for believing that this supply might be improved and whether the existing facilities for development of resources are adequate in practice. In this connection we examine the flow pattern in more detail and, in particular, we try to see to what extent participation in education is associated with factors such as family circumstances.

SOCIAL GROUP

6.87 For this purpose we have classified the pupils by social group, that is, by the occupations of their parents, as is done in the Census of Population. The social groupings used in this chapter are based on the groupings used in the Census of Population and are as follows:

GROUP A: Farmers.

B: Professional, employers and managers, salaried employees (senior).

C: Intermediate non-manual workers, e.g. own account proprietors, clerks (including bank clerks and civil servants below rank of higher executive officer), shop assistants, garda.[74]

D: Other non-manual workers, e.g. bus or lorry drivers, conductors, postmen, caretakers, waiters, railway porters.

E: Skilled manual workers, e.g. electricians, carpenters, foremen.

F: Semi-skilled and unskilled manual workers, other agricultural occupations and fishermen, e.g. agricultural labourers, turf workers, builders' labourers.

G: As used here this consists of cases where the father is unemployed or deceased and no occupation other than 'housewife' is given for the mother. This code was not used where it was indicated that the widow was carrying on the late husband's business or farm.

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[74] Up to and including the rank of sergeant.

H: As used here this consists of cases where no information was given as to the parents' occupation.

6.88 It must be emphasised that the division into social groups does not purport to be a division by level of income, data for which are not available. No comparisons as to gross income or disposable income are implied either within a group or between groups. For instance Group A (Farmers) covers a wide range of incomes,[75] their holdings vary in size from under 15 acres to over 200 acres and in rateable valuation from under £2 to over £200—in 1951 two farmers in every ten had less than 15 acres while one in ten had more than 100 acres.[76]

6.89 As a first step in considering the association between social group and participation in education, the relevant data derivable from the Census returns were obtained from the Central Statistics Office.[77] Tables 6.27 to 6.29 and Chart 6.2 are based on these data. It is important, however, to note the basis on which these tables have been compiled, which is as follows.

6.90 The Census data give the parents' social grouping for all children under 14 and for those over 14 in full-time education, for the rest they give the person's own group. The breakdown of total persons in say the 15-19 age group by parents' social group is thus not available, so that it is not possible to compare actual participation rates by social group. Therefore, for purposes of comparison the numbers in education in a particular social group in 1961, aged 15-19 say (Table 6.28), have been expressed as a percentage of the number of persons aged 5-9 in the same social group in the 1951 Census (reduced slightly to allow for deaths).

6.91 Tables 6.27 to 6.29 and Chart 6.2 may, therefore, be regarded as giving the relative probabilities that a child in a particular social group in 1951 would be participating in full-time education in Ireland in 1961. This is subject to the qualification that we do not know how a particular parent's social grouping may have altered between 1951 and 1961. The change in the general pattern of social groupings between 1951 and 1961, however, is not of such a magnitude as to cast doubt on the general conclusions drawn from these tables. The relative rates given in these tables are lower than the actual rates based on the 1961 population because some of the 1951 children will have emigrated in the interval—some of these may of course be at school in their country of residence. The actual participation rates in 1961—those based on the 1961 population—are given in the last row of each of these tables. As might be expected the difference is most marked in the case of the highest age group (20-24) (Table 6.29). Census data would include students from outside the State.[78]

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[75] National Farm Survey.
[76] Appendix VI. Table 26. *Source:* Census of Population, 1961.
[77] See Appendix.

6.92 These tables (6.27-6.29) and the accompanying diagrams[79] show a very marked association between social group and participation in full-time education. In particular they show a marked contrast between Groups B (Professional, Senior Employees, etc.) and C (Clerks, etc.) on the one hand and Groups D, E, F, (Skilled, Semi-skilled and Unskilled Workers, etc.) on the other, a contrast which becomes the more marked the higher the age group and the higher the level. If the same circumstances were to prevail in future it would mean that today's children of those latter social groups would have a relatively small chance of being in full-time education in ten years' time.

TABLE 6.27

Relative Rates of Participation in Full-time Education, 1961, *by Social Group, Persons aged* 14

(Calculated from Census of Population data supplied by the Central Statistics Office.)

Social Group	1951[2] Population aged 4	Persons aged 14 in full-time Education at 1961 Census		
		Total	Primary	Post-primary[4]
		As percentage of 1951 Population aged 4		
A	15,500	69·4	19·1	50·3
B	6,100	73·6	3·4	70·2
C	5,900	74·1	7·5	66·8
D	5,900	52·7	10·7	42·0
E	9,300	52·6	9·3	43·3
F[1]	15,300	43·4	14·3	29·1
TOTAL[2] ..	61,300	60·1	13·0	47·1
	1961 Population aged 14	Total as percentage[3] of 1961 Population aged 14		
	57,500	64·0	13·8	50·2

[1] Group G is included among the other groups in the Census. For Group H see next footnote.

[2] Including 3,300 in Group H (social group not known) of whom 2,560 were in

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[78] The Census was taken at vacation time, however.

[79] Chart 6.2.

TABLE 6.28

Relative Rates of Participation in Full-time Education, 1961, *by Social Group, of Persons aged* 15–19

(Calculated from Census of Population data supplied by the Central Statistics Office)

Social Group	1951 Population[3] aged 5–9	Persons aged 15–19 in full-time education at 1961 Census				
		Total	Primary	Post-primary	Third-level[2] (excluding Theology)	Theology
		As Percentage of 1951 Population aged 5–9				
A ..	71,000	27·7	1·0	25·8	0·9	0·1
B ..	27,800	46·5	0·4	39·7	6·2	0·3
C ..	27,100	39·3	0·5	35·9	2·8	0·2
D ..	26,900	16·6	0·6	15·4	0·5	0·1
E ..	43,100	17·3	0·6	16·1	0·6	—
F ..	70,600	9·8	0·8	8·8	0·1	—
TOTAL[1]	279,600	24·9	0·8	21·7	1·6	0·7
	1961 Population aged 15–19	Total as Percentage of 1961 Population aged 15–19				
	233,800	29·8	1·0	26·0	2·0	0·8

[1] Including 13,100 in Group H (social group not known) of whom 7,400 were in full-time education (400 in primary; 4,400 in post-primary; 800 in third level; 1,800 in Theology).

[2] Including some students from outside the State.

[3] Adjusted for deaths 1951–1961 (estimated).

TABLE 6·27 (contd.)

full-time education—660 in primary, 1,900 in post-primary including 60 classified as 'Theology'.

[3] Adjusted for deaths 1951–1961 (estimated).

[4] Including a very small number (0·1 per cent. of total) classified as ' Third Level '.

[5] The pupil numbers from which these percentages are derived were, of course, counted as of the date of the Census and accordingly would not be the same as Department of Education statistics, which relate to the beginning or end of the school-year, or to February. Hence no direct comparison with departmental statistics is possible.

TABLE 6.29

Relative Rates of Participation in Full-time Education, 1961, *by Social Group, of Persons aged* 20–24

(Calculated from Census of Population data supplied by the Central Statistics Office)

Social Group	1951 Population[3] aged 10–14	Persons aged 20–24 in full-time education at 1961 Census			
		Total	Post-Primary	Third-level[2] (excluding Theology)	Theology
		As percentage of 1951 Population aged 10–14			
A	65,800	1·3	0·2	0·8	0·3
B	25,800	7·9	0·6	6·8	0·5
C	25,000	4·1	0·4	3·4	0·3
D	24,800	0·7	0·1	0·5	0·1
E	39,800	0·8	0·1	0·6	0·1
F	65,500	0·2	0·1	0·1	—
TOTAL[1]	258,900	3·1	0·2	2·0	0·8
	1961 Population aged 20–24	Total as percentage of 1961 Population aged 20–24			
	158,000	5·1	0·3	3·4	1·3

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[1] Including 12,200 in Group H (social group unknown) of whom 3,300 were in full-time education (100 in post-primary; 1,600 in third level; 1,600 in Theology).

[2] Including some students from outside the State.

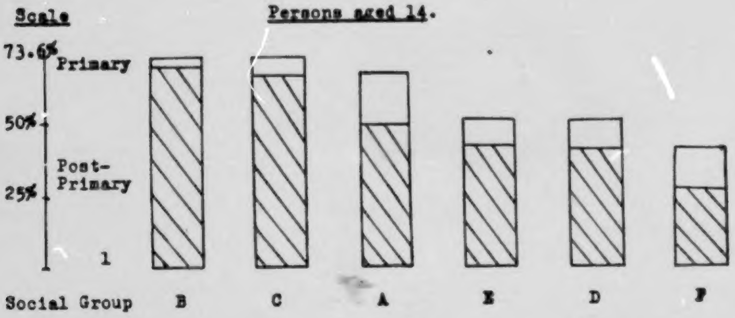
[3] Adjusted for deaths 1951–1961 (estimated).

CHART 6.2

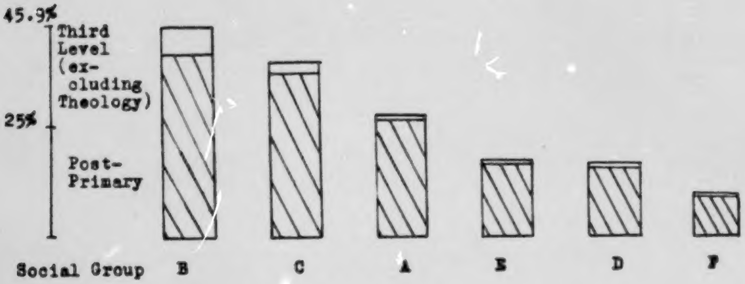
RELATIVE RATES OF PARTICIPATION IN FULL-TIME EDUCATION BY SOCIAL GROUP

(Based on 1961 Census of Population data)

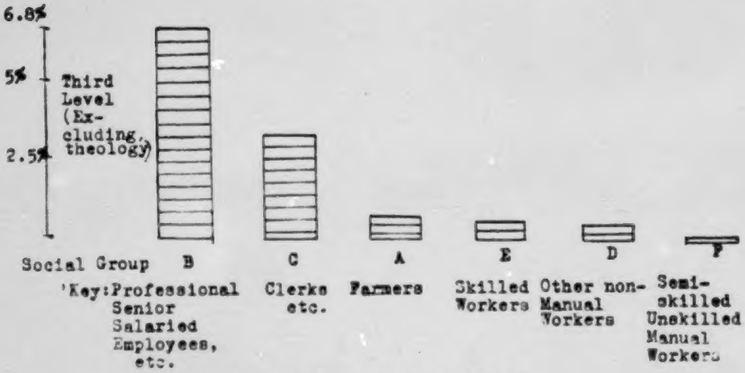
Persons aged 14.



Persons aged 15 - 19.



Persons aged 20 - 24.



(For details see Tables 6.27-6.29)

TOWN/RURAL

6.93 Table 6.31, based on Census of Population data in Table 6.30, gives the participation rates by male/female and by town/rural. It shows the rural rate as higher than the town rate and the female rate as higher than the male rate—the rate for rural females being by far the highest. Comparisons based on these rates must be treated with caution, however. In particular, it must be noted that these figures embody the effects of migration of persons from rural areas to work[60] in towns. Such migration reduces the rural population and so gives an increased rural rate of participation while at the same time increasing the town population and so giving a reduced town rate of participation. That the higher rural rate owes much to this migration is supported by the fact that the rural males aged 15-19 outnumber the town males and have the lowest rate while the rural females age 15-19 are fewer than those in the towns and have the highest rate. Without migration one would expect the town/rural balance to be much the same for females and for males, as in the age group 0-14 where the rural areas outnumber the town areas in both males and females.[61] Another factor to be considered is the possible differences in emigration as between town and rural areas and as between males and females.

COUNTY DIFFERENCES

6.94 Such differences in participation can be further investigated by comparing the position in the different counties.[62] For each

TABLE 6.30

Number of Males and Females aged 15–19 *and Number in Full-Time Post-Primary*[1] *Education by Town and Rural Areas*, 1961

	MALE		FEMALE		TOTAL	
	Population aged 15–19	Number in full-time post-primary education	Population aged 15–19	Number in full-time post-primary education	Population aged 15–19	Number in full-time post-primary education
Town	53,148	14,527	59,033	13,144	112,181	27,671
Rural	67,199	13,834	54,452	19,221	121,651	33,055
TOTAL	120,347	28,361	113,485	32,365	233,832	60,726

[1] Second Level.

Source: Census of Population, 1961.

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[60] The Census was taken at a time when university and boarding school students would normally be at home on vacation.

[61] Census of Population, 1961, Vol. II, Table 16.

[62] *Investment in Education*, Cannon, National Press, Dublin 1963.

TABLE 6.31

Number of Males and Females aged 15–19 in Full-Time Post-Primary[1] Education as Percentage of Population aged 15–19, by Town and Rural Areas

	Male	Female	Total
	Percentage in full-time education		
Town areas	27·3	22·3	24·7
Rural areas	20·6	35·3	27·2
TOTAL ..	23·6	28·5	26·0

[1] Second Level.

county there is available the population by age in the census years and the number of secondary school pupils whose home residence is in that county.[83] The number of secondary school pupils from each county can thus be expressed as a percentage of the appropriate age group in that county. We have taken the school-year 1962/63 and the Census of Population in 1961, being the latest for which data were available.

6.95 The pupils in the secondary tops[84] were ascribed to the county in which those schools were situated, as were the pupils in the vocational schools[85] (whole-time day continuation) as their county of home residence was not known. However, since almost all such pupils are day pupils this procedure is unlikely to cause more than marginal errors in allocation. The same is not true of vocational pupils in whole-time technical[86] courses, however, and for that reason these have not been included at all.

6.96 The age range 13-17 at Census time (April) was taken because the median age of entrants to secondary school is 13 years, 2 months in August[87] and five years appears to be the general norm for completion of the secondary school course. For instance, on 1 February, 1964 only about 6,500 secondary pupils were under 13 and only about 3,500 were 18 or over out of a total of about 88,000 pupils. This age range is unflattering to the vocational school participation as the continuation course is generally only a two year one, from about 14 to 16 years of age. It might have been more appropriate to have taken the age range 11-15 in 1961 to correspond to 13-17 in 1963.

6.97 It will be appreciated of course that these figures do not give the overall participation in full time education in the age range

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[83] Annual Report (S.O.).
[84] February, 1963 school census data.
[85], [86] Annual Reports (S.O.).
[87] Based on Annual Report, 1962-63.

13-17 as many would be attending other schools—primary, commercial, university etc. Nor is any account taken of education outside the State.

6.98 The details are given in Table 6.32 and the results are summarized in the diagrams.[**]

6.99 It will be seen at once that there are marked differences in participation between the counties. In regard to the secondary schools the highest counties have about twice the rate of the lowest counties, while in secondary and vocational together the highest counties have fifty per cent more than the lowest. Since the lowest county in each case is one of the most populous (Donegal, with 11,784), it will be seen that there is an appreciable number of potential pupils involved.

6.100 A comparison of the order of the counties in the two diagrams will show the effect of adding on the vocational pupils. Leitrim and Longford, the two smallest counties numerically, improve their placing considerably as does Sligo—these have the highest participation in vocational (about 20 per cent)—while Waterford and Dublin decline, having the lowest participation in vocational (about 7 per cent). It may at first seem somewhat surprising that those predominantly rural counties should do relatively so much better than Dublin as regards vocational continuation education, but then Dublin City has heavy commitments in higher technical education and the effects of migration must also be borne in mind—see paragraphs 103 *et seq.* It is mentioned elsewhere in this report that there appears to be an unsatisfied demand and a shortage of capacity in Dublin.

6.101 What are the counties that do relatively badly as regards participation? Donegal is easily the worst, and the six lowest counties—in each diagram—are the three Ulster counties (Donegal, Cavan, Monaghan) and three of the Leinster counties (Laois, Meath, Kildare). Indeed of the twelve Leinster counties, nine are in the lower half for secondary schools and eight in the lower half for secondary and vocational together. The Munster counties on the other hand are all well placed, particularly in the case of secondary schools. The five Connacht counties figure reasonably well although the two most populous of them (Galway and Mayo) are in the lower half in the second diagram, having about 41 per cent participation against 52 per cent for Tipperary with much the

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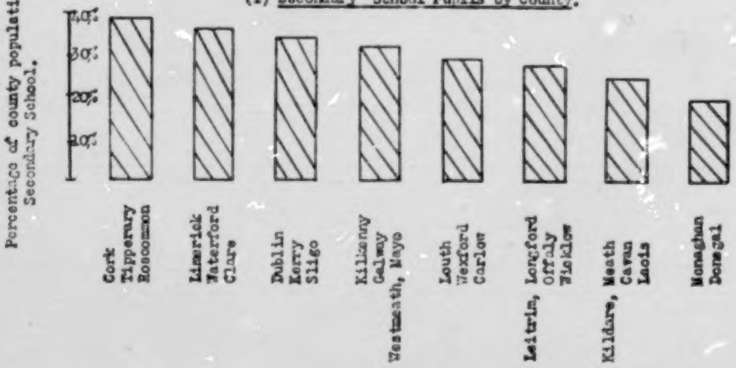
[**]Chart 6.3.

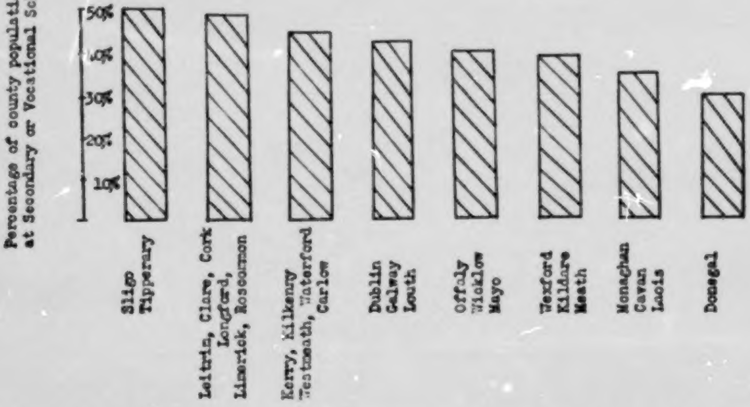
CHART 6.3

SECONDARY AND VOCATIONAL SCHOOL PUPILS 1962/3 BY COUNTY OF HOME RESIDENCE, AS PERCENTAGE OF POPULATION AGED 13 - 17 (1961 CENSUS).

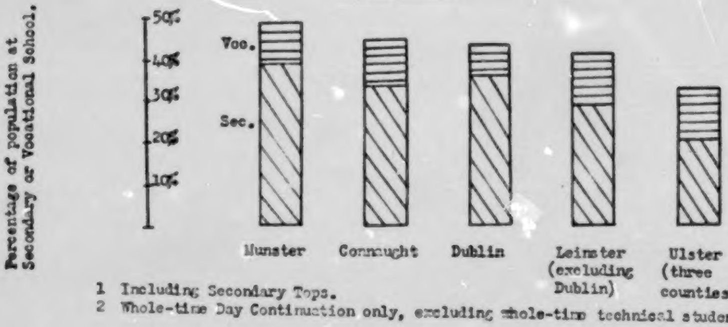
(i) Secondary[1] School Pupils by County.



(ii) Secondary and Vocational[2] School Pupils by County.



(iii) Secondary and Vocational School Pupils by Province (and Dublin).



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1 Including Secondary Tops.

2 Whole-time Day Continuation only, excluding whole-time technical students.

TABLE 6.32

Secondary and Vocational School Pupils 1962/63 *by County of Home Residence, as Percentage of Population* aged 13–17 (1961 *Census*)

County	Population[1] 13-17 years	At Secondary[3] School ('62/'63)	At Secondary[2] Tops ('62/'63)	Total Secondary	Secondary as Percentage of Population	Vocational[4]	Vocational as Percentage of Population	Secondary and Vocational as Percentage of Population
Carlow	3,286	877	91	968	29·46	495	15·06	44·52
Cavan	5,311	1,327	—	1,327	24·99	528	9·94	34·93
Clare	7,073	2,599	—	2,599	36·75	900	12·72	49·47
Cork	29,924	10,791	1,049	11,840	39·57	2,927	9·78	49·35
Donegal	11,784	2,069	97	2,166	18·38	1,395	11·84	30·22
Dublin	65,715	21,799	1,815	23,614	35·93	4,893	7·45	43·38
Galway	15,594	5,181	41	5,222	33·49	1,448	9·29	42·78
Kerry	11,485	4,117	—	4,117	35·85	1,213	10·56	46·41
Kildare	6,857	1,544	247	1,791	26·12	897	13·08	39·20
Kilkenny	6,194	1,850	224	2,074	33·49	720	11·62	45·11
Leitrim	3,072	789	99	888	28·91	652	21·22	50·13
Laois	4,326	917	156	1,073	24·80	393	9·09	33·89
Limerick	13,254	4,978	95	5,073	38·28	1,445	10·90	49·18
Longford	3,055	874	—	874	28·61	633	20·72	49·33
Louth	6,895	1,993	127	2,120	30·75	825	11·97	42·72
Mayo	12,799	4,082	—	4,082	31·89	1,001	7·82	39·71
Meath	6,654	1,708	—	1,708	25·67	856	12·87	38·54
Monaghan	4,372	937	—	937	21·43	589	13·47	34·90
Offaly	5,198	1,208	200	1,408	27·09	743	14·29	41·38
Roscommon ...	5,458	1,549	547	2,096	38·40	536	9·82	48·22
Sligo	4,943	1,354	409	1,763	35·67	851	17·22	52·89
Tipperary	12,079	4,433	342	4,775	39·53	1,476	12·22	51·75
Waterford	6,800	1,958	605	2,563	37·69	473	6·96	44·65
Westmeath	5,175	1,657	—	1,657	32·02	677	13·08	45·10
Wexford	8,251	1,890	558	2,448	29·67	796	9·65	39·32
Wicklow	5,682	1,452	76	1,528	26·89	770	13·55	40·44
TOTAL ...	271,236	83,933[5]	6,778	90,711	33·44	28,132	10·37	43·82

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[1] Census of Population, 1961.

[3] Annual Report (S.O.).

[2] February Census 1963, by County of School. The total at 1 February, 1963 (6,778) was practically the same as the total (6,789 Annual Report 1962/63, page 127) at the beginning of the school year, to which date the secondary and vocational figures refer. The figures given on page 103 of the Annual Report (total 5,754 on 30 June, 1963) were not regarded as reliable for this purpose.

[4] Whole-time day continuation only, excluding whole-time technical.

[5] Excluding those from outside the State.

same population (12,000 to 16,000). Here again it will be seen that the numbers involved amount to thousands of potential pupils.[89]

6.102 These differences by province are illustrated by diagram (iii) in Chart 6.3 derived from Table 6.32. Dublin (City and County) is shown separately as its population is so large—greater than the rest of Leinster, and greater than Connacht and the three Ulster counties together. A difference of one per cent here represents of course a much greater numerical difference than in the case of the counties as we are now dealing with the population of provinces.

6.103 In making these comparisons, as in paragraph 6.93 above, it must be borne in mind that these rates relate to the number of persons aged 13-17 actually residing in the county at the time of the Census.[90] These rates therefore, embody the differential effects of migration and emigration.[91] The more who leave a county the higher will the rate of educational participation appear: conversely the more who enter a county the lower will the rate appear. It could be argued, for example, that the relatively high rate in Leitrim and the rather moderate rate in Dublin are largely due to this factor, and that since the three Ulster counties have been an area of relatively high emigration[92] their true relative position is probably even worse than already stated. Indeed the availability of education may itself be a cause of migration.

6.104 To gain some idea of the effects of this emigration factor we expressed the 10-19 year old population in 1961 as a percentage of the 0-9 year olds in 1951, by county. (Table 27 Appendix VI). The percentage decreases range from 21 per cent for Leitrim to 5 per cent for Dublin, the other highest being the three Ulster counties and Wexford (18 per cent), while the other lowest were Cork, Louth, Offaly and Galway (11 per cent). This suggests that the high ranking of Leitrim and the lower ranking of Dublin in educational participation may be somewhat exaggerated, while it accentuates the high ranking of Cork and the low ranking of the three Ulster counties and Wexford.

6.105 To examine this emigration effect further we also expressed the pupils as a percentage of the 3-7 year olds at the 1951 Census.

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[89] These results agree generally with those in the work referred to in paragraph 6.94, footnote 82, the four lowest counties being the same. Sligo and Roscommon figure much higher here, however, owing to the large numbers in secondary tops.

[90] University and boarding school students would normally be home on vacation at that time.

[91] The term ' net emigration ' in reference to a county is used to cover net movements out of the county whether migration within the State or emigration out of the State.

[92] Statistical Abstract 1962, Table II.

The results were given in Table 28, Appendix VI. The general picture is not substantially changed. As expected Leitrim has fallen back, from third place to tenth, while Dublin has improved its ranking—from fourteenth to eighth : Cork has moved into second place while Wexford has dropped back slightly. Rather surprisingly, however, Sligo is still the highest and Roscommon has moved nearer the top. Apart from that the general rankings show little change. The same four counties—indeed the same ten—are still lowest though in slightly different order, Donegal retaining its position at the bottom. Nine of the Leinster counties are still in the lower half and only one county, Leitrim, has dropped out of the first eight. The ratios between lowest and highest counties are practically unchanged : the Donegal figure is now 56 per cent of the Sligo figure as against 5[illegible] per cent in Table 6.32 The provincial order[93] is unchanged but Dublin is now ahead of Connacht.

6.106 By analogy with paragraph 6.91 these rates might be regarded as giving the relative probabilities that a child aged 3-7 living in a particular county would be living in the same county ten years later and be in secondary or vocational school. However, there is probably much greater mobility between counties than between social groups, the point of discussion in paragraph 6.91.

6.107 We now ask ourselves the question 'why have some counties so much smaller participation than others ?' Since we have already found a marked association between participation and social group, we first see to what extent the county differences can be explained on that basis, or rather to what extent the two factors are inter-related. This ideally would call for more detailed analysis but we have had to content ourselves with the following, perhaps summary, examination. The social group composition of persons aged 0-14 is available[94] for each county : we expressed these in percentages as follows :—

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[93] Chart 6.3 (iii).
[94] Census of Population, 1961.

TABLE 6.33

Social Group Composition of Population aged 0–14 *by Province and Selected Counties*
(Derived from Census of Population, 1961)

Province and County	Social Group[1] A	B	C	D	E	F	Total[2]
	Percentage Distribution of Population aged 0–14						
Dublin	1·0	15·6	14·1	15·4	22·1	26·5	100
Rest of Leinster	24·2	7·8	8·3	7·8	14·9	32·0	100
Munster	27·9	8·9	8·9	8·8	14·7	26·2	100
Connacht	57·5	7·1	6·4	4·8	8·1	12·4	100
Ulster (three counties) ..	42·7	7·1	8·1	6·7	10·3	21·0	100
TOTAL ..	25·5	10·0	9·7	9·6	15·4	25·2	100
Cavan	51·8	6·0	7·4	5·4	8·8	17·6	100
Donegal	36·8	7·1	8·5	7·6	10·7	24·7	100
Monaghan	46·3	8·4	7·9	6·1	11·2	15·8	100
Sligo	45·2	9·4	7·0	7·0	10·5	16·4	100

[1] For details see paragraph 6.87.
[2] Including unknowns—about 5 per cent. all round.

We then applied to each social group its participation rate in post-primary education (from Table 6.27), to give a rough comparative index. These were then compared with the rates found earlier,[65] as follows :—

TABLE 6.34

Actual and Hypothetical Participation Rates, by Province and Selected Counties, and Rateable Valuations of Farms[1]

Province and County	Actual Rates of Participation[2] in Post-primary Education	Participation Rates derived from Tables 6·32, 6·28	Proportion of farms having a Rateable Valuation[3] of Under £10	£50 and over	Income in Agriculture per £ valuation[4] £
	Percentages				
Munster ..	44·1	19·9	15·7	23·4	21·6
Connaught ..	39·8	23·1	36·0	3·9	21·1
Dublin ..	42·2	19·7	—[5]	—[5]	—[5]
Rest of Leinster.	36·5	18·7	5·8	35·6	15·5
Ulster (three) counties)	27·2	21·2	35·5	8·4	16·4
Sligo	46·2	22·1	27·8	5·5	18·7
Monaghan ..	29·1	22·2	11·3	12·4	12·3
Cavan ..	28·8	22·2	16·9	7·8	15·3
Donegal ..	25·8	20·4	60·9	6·8	21·2

[1] These are included for reference later in pars. 6.111, 6.113.
[2] Par. 6.105 and Appendix VI, Table 28.
[3] Census of Population, 1961.
[4] *Irish County Incomes in* 1960 Atwood and Geary, Economic Research Institute, Dublin (September, 1963).
[5] Included in Rest of Leinster.

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[65] Paragraph 6.105, Appendix VI, Table 28. The general result is the same if we use the rates in Paragraph 6.98 (Chart 6.3 and Table 6.32).

6.108 The attempted explanation clearly fails: on that basis, Connacht and Ulster should head the list, while Cavan and Monaghan should do as well as Sligo instead of being at the other end of the list (as in Chart 6.3, paragraph 6.98).

6.109 Alternatively we might try to relate the county differences to the size of a particular social group in the counties. However, this does not prove fruitful either: on the basis of groups A, D, E, or F, (Table 6.33) Connacht and Ulster should again head the list, on the basis of Group C Connacht would be below Leinster and Ulster. Group B is the most promising as regards the ranking referred to in paragraph 6.105 i.e. Munster, Dublin, Connacht, Rest of Leinster, Ulster in that order.

6.110 The percentage of Group B in a county plotted against the percentage participation in secondary education,[96] is given in Chart VI.1, Appendix. The graph shows that the association is quite weak. As an indication of how far it departs from a linear relationship we find the correlation coefficient (0.39) is only just significant. The association with secondary and vocational together is much the same.

6.111 We have thus failed to explain the county differences on the basis of differences in social grouping. However, it may be that the social groupings as we have used them are not sufficiently sharply defined for this purpose, in particular Group A (Farmers). We see from Table 6.33 for instance that Connacht has more than twice the national average proportion of farmers and only half the national average of unskilled and semi-skilled workers (Group F). The same applies to a somewhat lesser extent to Ulster. This suggests that we should take a closer look at the farmers' category. As mentioned earlier[97] the size and valuation of holdings vary considerably. In Table 6.34 we have shown the percentage of holdings with valuations under £10 and those of £50 and over for the areas listed. This immediately affords a plausible explanation on the basis of income of why the Connacht and Ulster social groupings gave such a falsely high ratio of participation—they have 36 per cent of farms under £10 valuation as against 16 per cent for Munster and a mere 6 per cent for Leinster, and conversely they have only between 4 per cent and 8 per cent of farms over £50 as against 23 per cent for Munster and 36 per cent for Leinster. Probably the most striking example is Donegal itself where over 60 per cent of the farms have a valuation of less than £10. It might well be then that if Group A in Table 6.28 were broken down by valuation, the resulting ratios would go further towards accounting for the county differences.

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[96] As in Par. 6.105.

[97] Par. 6.88 and also Table 26, Appendix VI.

6.112 Valuations of course may not always reflect earning capacity. Data on agricultural income per £ valuation are available.[98] The range is very great, from £11.6 in Westmeath to £37.7 in Kerry, with an average of £18.6. Table 6.34 shows the figures for the areas listed. These tend to reduce the effect of the disparity in valuations between Leinster and Munster while accentuating the low valuations in Ulster.

6.113 This brings us naturally to consider whether the county differences in participation in education are closely associated with differences in income. Estimates of the personal income[99] per head of population are available[100] for each county and we have plotted these against the percentage participation[101] in secondary education in Chart 6.4.

6.114 It will be seen from the graph that the association is quite weak. There is no question of approximating the relationship by a straight line—the correlation coefficient is only 0.17. For instance of the counties with lowest participation, Donegal and Cavan have two of the lowest incomes while Kildare and Meath have two of the highest. Some of the counties with highest participation—Sligo, Roscommon, Clare for instance—have lowest incomes. Of course the county income per head refers to all of the people in the county, and not just to the parents of children aged 0-14 as was the case with the social groupings used in paragraphs 6.87 *et seq*. This effect however, is not thought to be of great consequence to our argument—see Appendix VI.

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[98], [100] See footnote to Table 6.34.

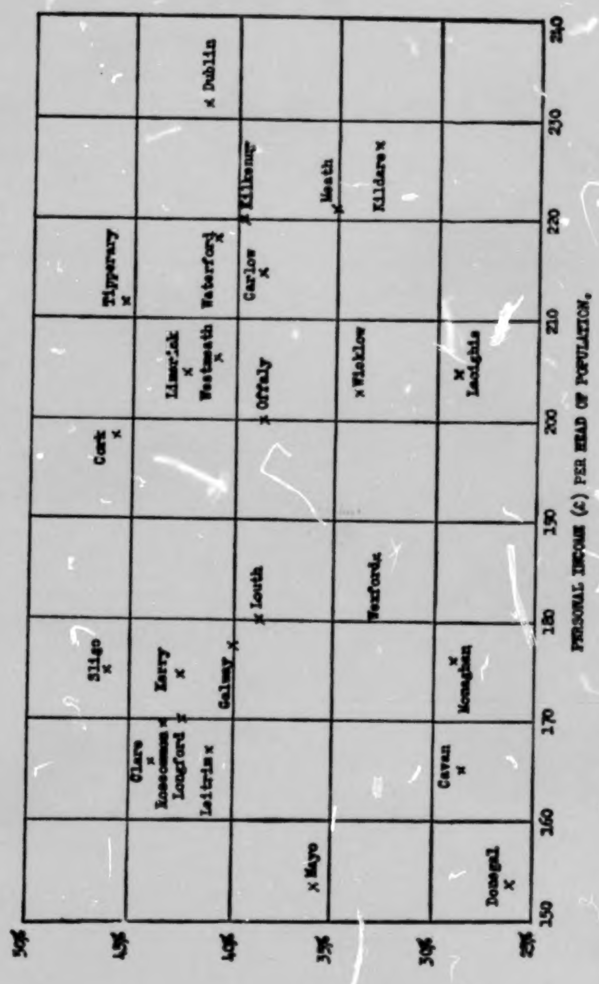
[99] This includes social welfare, emigrants' remittances etc.

[101] Par. 6.105 and Table 28, Appendix VI. The general result is the same if the rate in Chart 6.3 are taken.

NUMBERS RECEIVING POST-PRIMARY EDUCATION AS PERCENTAGE OF POPULATION. (13-17).

CHART 6.1

POST-PRIMARY PARTICIPATION BY PERSONAL INCOME, BY COUNTY.

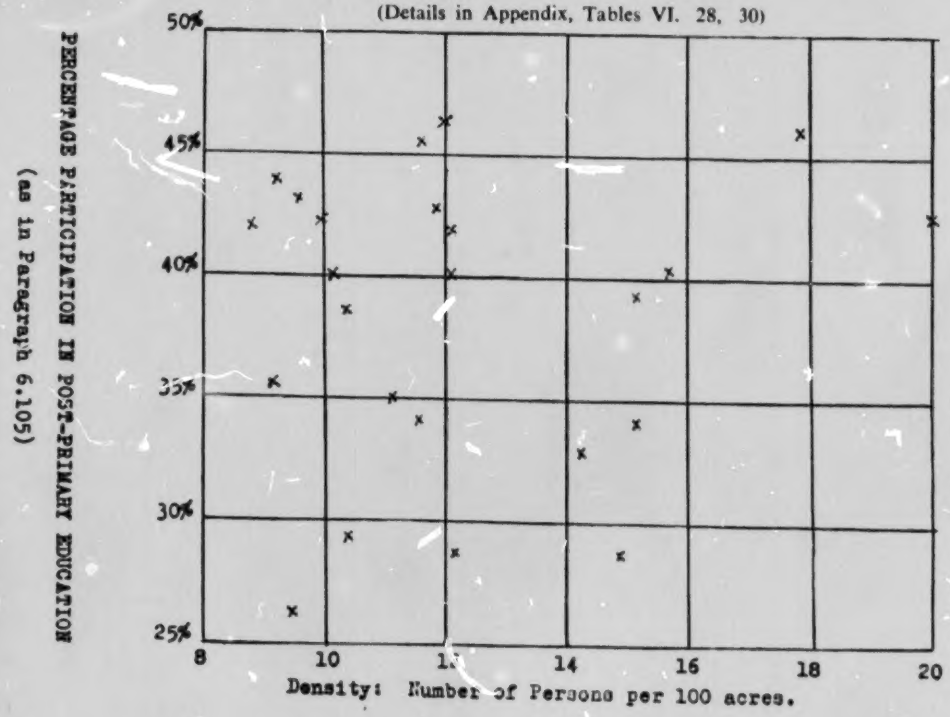


PERSONAL INCOME (£) PER HEAD OF POPULATION.

CHART 6.5

POST-PRIMARY PARTICIPATION PER COUNTY BY DENSITY OF POPULATION (EXCLUDING DUBLIN)

(Details in Appendix, Tables VI. 28, 30)



Not shown: Co. Louth
(Density 33
Participation 39.5%)

6.115 We have thus failed to explain the differences between the counties on the basis of social group or county income, even though these undoubtedly have some effect. Since grants are not available for transport, the density of population in a county might be a factor. Chart 6.5 shows, however, that the association between density of population and participation in education is quite weak. It is far from being a linear relationship—the correlation coefficient is a mere 0.1. The relationship with degree of urbanisation (percentage of population in towns) is little better—Chart VI.2, Appendix—the correlation coefficient being only 0.21. Dublin was excluded from these calculations. The data are given in Appendix VI, Table 30.

6.116 Looking for other possible causes one sees[102] that the three Ulster counties have substantial Protestant minorities (11.7 per cent to 14.2 per cent). However, Protestants as a whole appear to have a much higher rate of participation in secondary education than the rest of the population. In 1961 there were an estimated 10,631 Protestants[103] aged 13-17 in the State, including visitors and others born outside the State, while there were 5,277 pupils[104] in the 45 Protestant[105] secondary schools[106] in 1962/63. This gives a participation rate of 49.6 per cent against 33.5 per cent for the population as a whole.[107] In the three Ulster counties, the percentage of Protestants among children aged 10-14 in 1961 was:—Cavan 10 per cent, Monaghan 11 per cent, Donegal 12 per cent. There are no data available on the number of Protestants from a particular county who are attending secondary school. The pupils in Protestant schools in those counties formed the following proportions of the total pupils at schools in these counties, in 1962/63:—Cavan 9.6 per cent, Monaghan 7.8 per cent, Donegal 10.1 per cent, which are slightly lower than the 10-14 percentages, but it is clear that little reliance can be placed on that as a measure. All in all we cannot say that the size of the Protestant minority in the Ulster counties is a cause of the relative lowness of participation in education there.

6.117 There may be a slight tendency in those counties to send children to schools outside the State, given for example that the diocesan seminary for part of Donegal is outside the State. However, this is hardly of great proportions nowadays. Again there may be difficulties of communication in Donegal and Cavan, but the same can scarcely be said of Kildare and Meath which are also among the lowest. Of course it may simply be that there is less interest in education in those counties, but we have no direct evidence of this.

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[102] Census of Population, 1961.

[103] Mean of 11,129 aged 10–14 and 10,133 aged 15–19, Census 1961. These figures comprise all persons other than those returned as 'Catholic'.

[104] Pupils eligible for recognition. List of Recognised Secondary Schools 1962–63 (S.O.).

[105] The main religious denomination of the pupils in a secondary school is not officially designated but it is a matter of common knowledge. Of course of the two sets, Protestant pupils and pupils of Protestant schools, neither totally includes the other.

[106] Excluding the very few non-aided secondary schools.

[107] Table 6.32.

6.118 We have failed, therefore, to find a distinctive pattern which would explain the differences between counties in the matter of participation in education. Although our examination of this complex phenomenon has admittedly been rather summary it would appear to be forcing us to the conclusion that the cause of much of the disparity lies in the procedure by which secondary schools come into being. Until now[108] at any rate the State has never accepted responsibility for providing secondary education and it has not taken any initiative towards the establishment of secondary schools apart from aiding them when they are established. This has, therefore, depended on private enterprise, religious or lay, and local ecclesiastical encouragement, the absence of either of which would effectively preclude the founding of a school in an area. Three points may be noted here. Firstly, the great majority of the secondary schools in the country were founded by the dioceses or religious orders, some of them indeed before any public aid was available to them.[109] Secondly, since Government aid was not sufficient to induce the schools to dispense with fees and since grants were not available for transport or maintenance, it is not surprising that some areas would tend to be more favoured than others.[110] Thirdly, it is noteworthy that schools run by religious orders of brothers and the lay Catholic schools are most numerous in Munster, which has the highest participation, while there is no secondary school run by a religious order of brothers in Cavan or Donegal, two of the counties with the lowest participation (except for one school at the edge of the latter county where county and ecclesiastical boundaries do not coincide). The establishment of vocational schools on the other hand is the responsibility of the local vocational education committees. It may be noted that the smallness of the local revenue need not prevent the provision of adequate facilities, as additional State grants may be paid to cover deficiencies in the normal revenue of vocational committees. The poorer counties have been receiving such grants, in some cases since 1955. We have seen that three of the poorest counties, Leitrim, Longford and Sligo, have the highest participation in vocational education.

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[108] 1963.

[109] Cf. Report of the Council of Education on Secondary Schools (S.O.).

[110] Cf. Chapter 10, for distribution of schools by areas.

6.119 We have perforce taken the county as our unit of comparison in these paragraphs. It will be obvious of course that conditions may vary greatly within a county, and that this problem needs to be examined for each locality. Separate figures for boys and girls by county were not available.

6.120 It must be remembered that even when there is a post-primary school in a locality it may be unsuited to some by reasons of limitations on entry (sex, religion, fees etc.), curriculum and standards (availability of subjects, instruction through Irish, etc.) or other factors. It appears then that if educational opportunities in the less fortunate areas are to be improved the State must concern itself with examining the present provision in each locality and with using its financial and other initiatives to see that no area is left without adequate facilities for post-primary education.

LEAVER'S SURVEY

6.121 We now describe briefly the results of our survey of pupils. The results are consistent with the general picture given by the earlier tables (Tables 6.27-6.29) based on Census data. As regards the accuracy of the social groups ascribed to pupils, we did not of course have the checks on their accuracy that would be used in a census of population. There may have been an element of upgrading in the returns, but in most cases the parents' occupation was given by the school. Groups B, C are shown as a composite group for convenience —the differences between those two groups do not become appreciable until the university stage is reached.

NATIONAL SCHOOL LEAVERS

6.122 The national school principals were asked to give the destination and parents' occupation for a ten per cent sample of those who left between autumn 1962 and autumn 1963. As explained earlier there were difficulties in estimating the rate of response. The lack of a reliable list of roll numbers was a source of uncertainty in all our work pertaining to national schools. We understand this lack arose largely from the practice of changing the roll number of a school when it is rebuilt and, as we have mentioned, the building programme has been stepped up in recent years. Another source of uncertainty is the number of small schools which would have no pupil in the ten per cent sample of leavers. That there was a bias in the response against the urban schools is indicated by Table 24, Appendix VI which shows the proportions of the different sizes of schools not covered by the response. It is also indicated by the social group composition of the response (Appendix VI, Table 25) which has a higher proportion of farmers and a lower proportion of skilled workers and other non-manual workers. Unfortunately, therefore, the element of uncertainty in these results is larger than we would wish. In all the response covered 4,107 pupils out of an expected 5,500 i.e. just 75 per cent (See par. 6.76).

6.123 The following table and chart 6.6 show in percentages the results of the survey, which covered 2,114 boys and 1,993 girls, of whom 1,462 boys and 1,491 girls entered post-primary education. A very small number, not included here, transferred to non-aided primary schools.

TABLE 6·35

Percentage Distribution of Sample of National School Leavers, by Destination, 1963, by Social Group

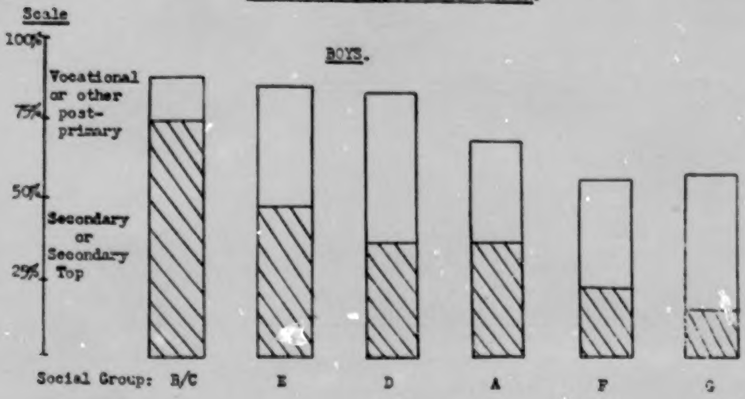
	Destination	SOCIAL GROUP							
		A	B/C	D	E	F	G	H[3]	Total
		Percentage Distribution							
Boys	Secondary School[1]	34·9	73·8	34·6	46·4	20·8	13·8	39·5	36·9
	Vocational School[2]	33·2	13·3	47·5	39·0	33·2	42·5	25·0	32·2
	Total Post-Primary	68·1	87·1	82·1	85·4	54·0	56·3	64·5	69·1
	Left Full-Time Education ...	31·9	12·9	17·9	14·6	46·0	43·7	35·5	30·9
	TOTAL	100	100	100	100	100	100	100	100
		Percentage Distribution							
Girls	Secondary School[1]	56·7	78·0	41·2	53·0	24·3	29·7	45·6	48·5
	Vocational[2]	26·3	11·6	37·0	28·0	30·1	43·3	20·6	26·3
	Total Post-Primary	83·0	89·6	78·2	81·0	54·4	73·0	66·2	74·8
	Left Full-Time Education ...	17·0	10·4	21·8	19·0	45·6	27·0	33·8	25·2
	TOTAL	100	100	100	100	100	100	100	100

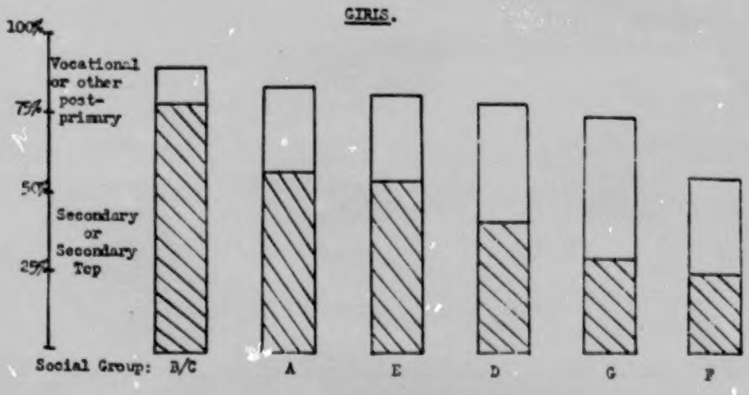
[1] Including secondary top.
[2] Including some commercial.
[3] Social group not known.

It will be seen that as regards total post-primary there is a fair degree of uniformity with the exception of group F (unskilled and semi-skilled) which is well below average, and of group G (unemployed etc.) which is also below average. Conversely of course these groups figure largely among those who left education altogether. Those who left full-time education from group B/C included the children of a number of army privates (group C) as well as the children of some professional men who were going abroad.

CHART 6.6

PERCENTAGE OF NATIONAL SCHOOL LEAVERS ENTERING POST-PRIMARY EDUCATION, 1963, BY SOCIAL GROUP.





6.124 As regards secondary education, however, there is a very marked superiority in the composite group B/C. These figures do not include those from the non-aided primary schools which would undoubtedly accentuate this superiority. The proportion of groups F and G are extremely low and group D (other non-manual workers) is also below average. We have seen that there is practically no transfer from vocational to secondary. It would seem then that persons who do not get into secondary school at this stage are highly unlikely to get into it at all. In group A (farmers) the girls do far better than the boys as regards secondary school.

6.125 Conversely group B/C has a very low proportion entering vocational education. The division as between secondary and vocational need not affect the combined output of persons with junior post-primary certificates, but it must affect the output of persons with higher certificates since, as we have seen, there are few avenues to higher levels from the junior cycle of vocational schools. It must also affect the quality of the output of the vocational schools. It is known that this latter problem has been engaging the Department for some time and that the proposed technical leaving certificate and regional colleges are expected to modify the position.

6.126 A factor which must influence pupil/parent choices in this regard is that entry to certain skilled trades has been largely restricted. In this context we note the recommendation of the Commission on Youth Unemployment (1951) that 'there should be no bar to entrance into apprenticeship of any young person save failure in the educational test prescribed by the Apprenticeship Committee, or physical unfitness.' Furthermore the age of entry (15 or 16) to apprenticeship effectively precludes the gaining of senior cycle education—in practice one cannot be a skilled tradesman and have a leaving certificate.

6.127 To give an indication of the composition of secondary school entrants we did not expand the sample but applied the proportions in Table 6.35 to the social group composition[111] for the 0-14 ages, allowing for the leavers from the non-aided primaries. It was assumed that the latter are predominantly from groups B/C and that they all go into secondary school. The result is shown in Chart 6.7 (second line).

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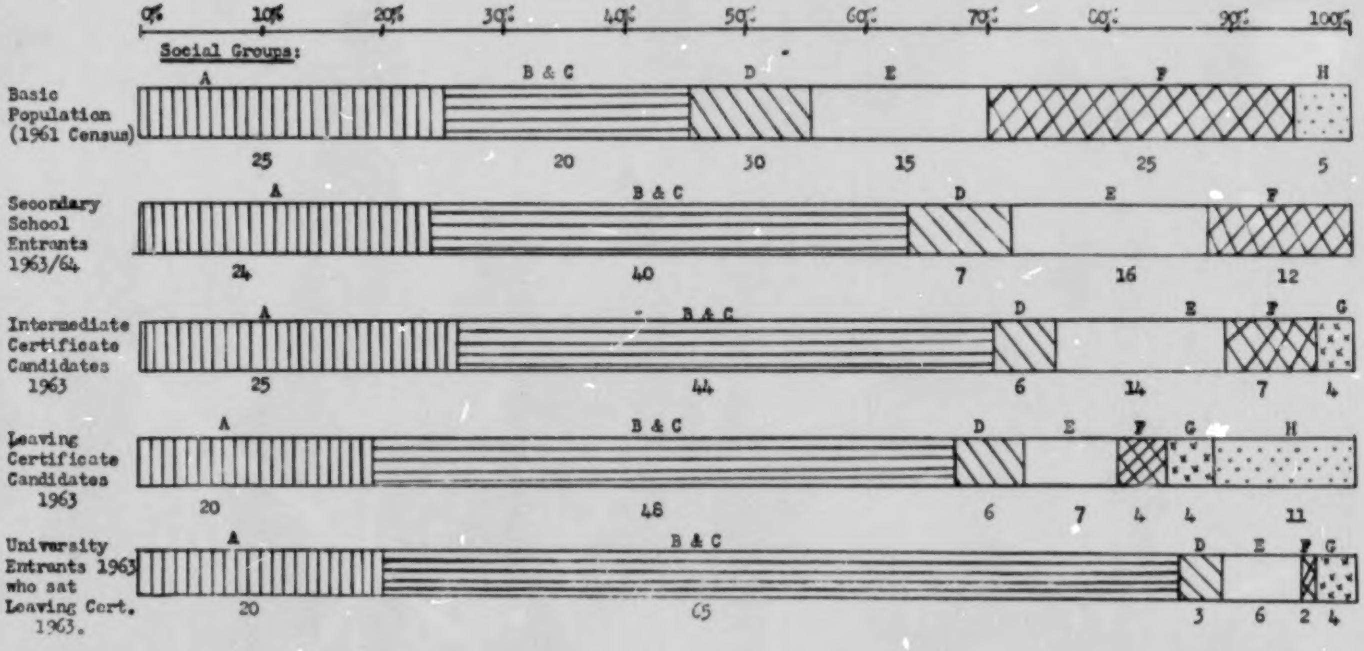
[111] Census of Population, 1961.

CHART 6.7

SOCIAL GROUP COMPOSITION, SECONDARY SCHOOLS AND UNIVERSITY, 1963.
(Note: This is not a cohort analysis).



SECONDARY SCHOOLS

6.128 We do not have data on the social group of those leavers who do not reach intermediate certificate level but we can effectively deduce it from the social grouping of those who do. Chart 6.7 shows the social group composition of the sample of intermediate certificate candidates described in paragraph 6.16 excluding those in Group H, i.e. those about whose social group no information was given. Comparing this with the composition of entrants to secondary school (previous line in Chart 6.7) we see that the social groups D, E, F have fallen off while group B/C has increased its proportion, group A being more or less the same. Although these are not the same cohort it suggests that drop-out from the junior cycle is relatively heavier among the children of the unskilled and skilled manual workers.

6.129 The same applies to the senior cycle. Chart 6.7 also shows the social group composition of leaving certificate candidates 1963. It will be seen that the process is continuing: compared with the intermediate candidates we see that groups B and C have increased their proportion while most of the other groups have lost ground.

UNIVERSITY

6.130 The final line in Chart 6.7 gives the social group of those leaving certificate candidates of 1963 who entered university in 1963. The parent's occupation was obtained for all of these—those not obtained through the schools were obtained from the university registrars.[112] It will be seen that by this stage the disparity between the social groups has become most marked and the strong association between university entrance and social group is unmistakable. It may be noted here that the number of university scholarships awarded by the county councils in 1962/63 was 214, of which 45 were in Dublin County Borough (Annual Report 1962/63). There were a further 25 scholarships awarded by the Department for students taking their university degree course through Irish. Of course, our data on composition at the different levels refer to different age groups, but to detract from the force of the university figures one would have to argue that the position further down was very much worse some years ago.

VOCATIONAL SCHOOLS

6.131 As in paragraph 6.128 for the secondary schools, we have the social group composition of group certificate candidates in 1963 from an approximate 8 per cent sample:—

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[112] In some cases these latter may refer to the parent's occupation as given on the student's birth certificate, but this is not thought to affect the general result.

TABLE 6.36

Percentage Distribution by Social Group of Sample of Group Certificate Candidates, 1963

	Social Group								
	A	B/C	D	E	F	G	H	TOTAL	Number in Sample
	Percentage Distribution								Number
Boys ..	28·3	10·0	10·8	17·9	19·9	8·1	5·0	100	381
Girls ..	45·3	13·9	8·2	11·2	15·4	3·0	3·0	100	267
Boys and Girls	35·3	11·6	9·7	15·1	18·1	6·0	4·2	100	648

6.132 Now the social group composition of entrants to vocational schools from national schools (about 85 per cent of total entrants) was as follows, in percentages.

TABLE 6.37

Percentage Distribution by Social Group of Vocational School Entrants from National Schools 1963

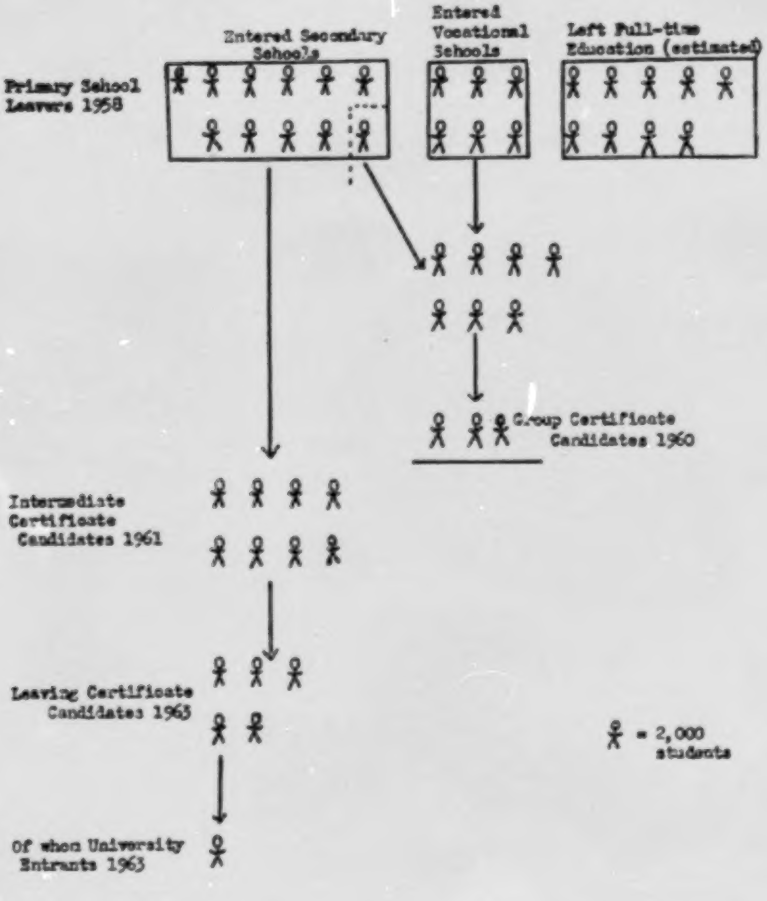
	Social Group							
	A	B/C	D	E	F	G	H	TOTAL
	Percentage Distribution							
Boys	36·7	5·6	11·3	11·7	26·9	5·0	2·8	100
Girls	35·7	6·9	8·4	8·9	31·3	6·1	2·7	100

This suggests that the early leavers are drawn largely from group F (semi-skilled and unskilled).

6.133 In considering the change in the proportions of the various groups shown in Chart 6.7 one must advert to the differences between the number involved at the various stages. Chart 6.8 is intended to give a general picture of the average progress of a cohort through the educational system. The picture is of course greatly simplified in the absence of individualised data.

CHART 6.8

DECLINE OF COHORT IN PASSING THROUGH SECOND LEVEL.


Primary School Leavers 1958
Entered Secondary Schools
Entered Vocational Schools
Left Full-time Education (estimated)
Group Certificate Candidates 1960
Intermediate Certificate Candidates 1961
Leaving Certificate Candidates 1963
Of whom University Entrants 1963
= 2,000 students

Note: This much simplified diagram is intended only to illustrate the general magnitudes involved.
It does not in practice represent the progress of an actual cohort as the time spent in the different stages varies appreciably. The numbers are approximate; the number of examination candidates excludes repeats. Secondary school includes secondary top.

SUMMARY

6.134 It would appear then that the main areas in which improvement might be sought are as follows:—

(i) The number who leave school without having reached primary certificate level.

(ii) The low rate of participation in post-primary (and higher) education by children of social groups F (unskilled and semi-skilled workers) and G (unemployed, widows, etc.).

(iii) The high rates of early leaving from vocational schools (continuation) and to a lesser extent from secondary schools (junior cycle).

(iv) The apparently small proportion of continuation students (vocational schools) who reach third level courses.

(v) The low rate of participation in university by many social groups and the relatively low certificate attainment of many entrants.

It is obvious of course that the above items are interrelated. It must be borne in mind that there are many and complex factors affecting the rate at which people in varying circumstances participate in education as full-time students, of which income is only one. On the one hand there are the schools, their location, their fee levels, whether there are specific restrictions on entry (e.g. confined to pupils from non-aided schools, boarders or postulants), their capacity, curriculum and organisation generally. On the other hand there are the potential pupils and their parents, their income and disposable income, their preferences as to spending, their environment, traditions etc. Influencing all of these are the actions, financial, regulatory and informational of the State and of public and private bodies. Measures designed to induce changes in participation must take account of these various factors.

6.135 The influence of such factors—social group, location etc.—on participation in education has of course been observed in many countries. Experience in other countries[113] has also shown that a significant improvement in participation by certain social groups can be a very slow and expensive process.

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[113] *e.g. 15 to 18: a Report of the Central Advisory Council for Education (England)*. H.M.S.O., 1959 (The Crowther Report).

CHAPTER SEVEN

Manpower

7.1 In this and the next chapter the present and future manpower patterns are surveyed. An examination is made of the amount and composition of projected employment on the one hand, and the size and qualifications of the potential working population available to fill such jobs on the other. The relationship which this manpower pattern has to the educational pattern is then considered.

7.2 In framing educational objectives future manpower patterns are obviously one of the relevant considerations. Raising the living standards of the community—an accepted goal of policy here as elsewhere—requires consideration of how the increase is to be achieved and of the adequacy of the resources available for the purpose. Skilled and qualified personnel are vital to the expansion of an economy, particularly so in an era of rapid technological change. If there is a shortage of some kinds of qualified persons, economic expansion may be checked or may be dependent on the immigration of persons with the required qualifications. Such a position might exist alongside a surplus of other kinds of personnel, with consequential unemployment of such people. Hence a comprehensive programme for economic development requires that the manpower aspects of the programme be integrated as far as possible with the other factors. The relevance of manpower factors may be illustrated in the Irish case by considering the following four tables:

Table 7.1 (a) Percentages of various social groups unemployed.
(b) Percentage of unemployed by social group.

Table 7.2 Number of immigrants by year of entry.

Table 7.3 Occupational distribution of immigrants by social groups.

Table 7.4 Educational level of Irish immigrants in Great Britain.

7.3 While no one of these tables taken in isolation may give any clear evidence of past imbalances in the manpower field, yet taken in combination the tables constitute strong circumstantial evidence of such imbalances. Thus, Table 7.1 (a) indicates that the heaviest unemployment occurs among unskilled workers (a phenomenon observed in many countries other than Ireland). According to Table 7.1 (b) the bulk of the unemployed are in this category. Table 7.3

relating to immigrants shows that these groups occupy a higher proportion of the administrative and professional positions—suggesting that on average those who have been, and are, entering the country contain a high proportion of highly qualified people. Table 7.4 on the other hand suggests that the occupational/educational level of Irish emigrants to Great Britain has been relatively low. In short, unemployment and emigration appear to be predominantly associated with lack of skills or other professional qualifications, while at the same time it is apparently necessary to import highly skilled people. The importation of skilled manpower is not of course conclusive proof of the lack of such skills in the country. It may be associated with the establishment in the country of foreign enterprises or with foreign control of existing enterprises. We were not in a position to verify the extent to which this would explain the phenomenon in the case of Ireland.

TABLE 7.1 (a)

Percentages of the Labour Force in each Social Group who are Unemployed

Social Group	Percentage Male	 Female
Farmers	—	—
Professional and Technical	0·8	1·5
Employers: Managers and Senior Salaried Employees.	0·5	—
Intermediate Non-Manual	2·1	2·6
Skilled Workers	4·6	3·3
Other (mainly unskilled)	14·8	5·4
TOTAL ..	5·7	3·0

TABLE 7.1 (b)

Percentage Distribution of the Unemployed by Social Group

Social Group	Percentage Male	 Female
Farmers	—	—
Professional and Technical	0·6	7·0
Employers, Managers and Senior Salaried Employees.	0·4	—
Intermediate Non-Manual	4·1	25·5
Skilled Workers	11·4	7·0
Other (mainly unskilled)	83·4	60·5
Total	100·0	100·0

Source: Census of Population, 1961.

TABLE 7.2

Persons born outside all Ireland, resident in the State at April, 1961, *Classified by year of taking up residence* (*Visitors excluded*)

Period of Entry	Number[1]	Year of Entry	Number
1920–29	502	1955	1,496
1930–39	603	1956	1,703
1940–44	399	1957	1,913
1945–49	1,162	1958	2,376
1950–55	1,457	1959	3,061
		1960	4,364

[1] Data for 1920–55 are annual averages for each period.

Source: Census of Population, 1961.

Note: This table does not give the aggregate number of persons born outside Ireland, who took up residence in the State in the periods or years listed. The data refer only to those who were still in residence in April, 1961.

TABLE 7.3

Total Population and Total Residents born outside the State (*26 Counties*) *Classified by Occupational Category* (*Persons aged* 14 *and over*)

Occupational Category	Total ('000) Population aged 14+		Persons born outside the State		Those born outside the State as a percentage of the total population	
	Males	Females	Males	Females	Males	Females
Agricultural, Forestry and Fishing.	353·0	42·1	4,457	809	1·3	1·9
Producers, Makers and Repairers, etc.	219·8	43·7	6,499	843	3·0	1·9
Transport and Communication.	66·0	10·7	2,539	171	3·9	1·6
Clerks and Typists ..	31·6	46·3	1,721	1,869	5·4	4·0
Commerce, Insurance and Finance.	65·9	38·7	3,296	1,092	5·0	2·8
Service and Entertainment.	25·5	62·5	1,739	1,854	6·3	3·0
Administrative, Executive and Managerial.	12·4	0·9	2,342	163	18·9	23·9
Professional and Technical	37·7	41·2	4,463	2,907	11·8	7·1
Other Labour Force ..	9·5	0·5	470	26	5·0	5·2
TOTAL Labour Force ..	821·5	286·6	27,526	9,734	3·4	3·4
Non-Labour Force Categories						
Retired	78·5	17·0	3,874	945	4·9	5·6
At School 14+ ..	47·8	52·5	1,679	1,571	3·5	3·0
Higher Education ..	11·5	4·5	2,252	828	19·4	18·4
Others not in the Labour force.	38·1	640·4	980	28,000	2·6	4·4
TOTAL Non-Labour Force	176·0	714·5	8,785	31,344	5·0	4·4
TOTAL Population aged 14 years and over	997·5	1,001·1	36,311	41,078	3·6	4·1

Source: Census of Population, 1961.

TABLE 7.4

Occupation, School Leaving Age and Further Education of Persons from the Republic of Ireland, Resident in Great Britain in 1961—Percentage Distributions

Occupation prior to coming to Great Britain	%	School leaving age	%	Further education and Vocational training	%
Professional	1	18	2	University/College	1
Business and Managerial	2	17	4	Technical College/Art School	5
Office and Clerical	2	16	11	Apprenticeship/	
Skilled Manual	12	15	16	Commercial Training	2
Semi-skilled manual	9	14	57	Domestic Training	1
Unskilled manual	22	13	4	Other replies	2
Nursing and Welfare	2	Under 13	5	No further education	89
Agriculture, fishing	28				
Students or too young to work	5				
Unemployed	10				
Other replies	7	No answer	1		
TOTALS	100	100	100		100

Source: 'Studies on Immigration from the Commonwealth', booklet No. 4. Economist Intelligence Unit, London, 1963 (Copyright).
The data, which relate to persons of Irish origin only, are taken from a wider sample survey of immigrants to Great Britain. The sample covered 3,000 persons, of whom about 1,500 were Irish.

7.4 There would probably be general agreement that the educational sector should provide an outflow of qualified persons sufficient to meet the manpower needs of the economy. Acceptance of this view in no way implies the existence of an upper limit to the number of persons who might acquire any given amount of general (or indeed specialised) education for other (non-occupational) reasons. The manpower approach is primarily concerned with establishing the *minimum* numbers who should complete each type of course. Since it usually takes several years to acquire specialised qualifications, and since in addition, it may also require several years to provide or expand the physical facilities for various educational courses, it follows that the problem of achieving manpower objectives must be considered many years ahead—hence the need for manpower forecasting.

7.5 The objective of such manpower forecasts is to provide a perspective of future trends and developments which may serve as a basis on which decisions, especially those of an investment nature may be taken. Hence it is desirable that manpower forecasts should not be formulated in isolation, but should be compatible with other socio/economic forecasts.

COMPATIBILITY OF MANPOWER REQUIREMENTS WITH POPULATION DATA

7.6 If estimates of the total population and its composition are available, the compatibility of an aggregate labour force projection with the population data must be checked by projecting labour force participation ratios (i.e. the proportion of any age-sex group who are in the categories 'at work' or 'actively seeking work'). A satisfactory (arithmetical) relationship between these three elements must be established. Trends in the individual participation ratios must also be compatible with some reasonable expectations of the economic and social situation envisaged at the target date.

METHODS OF FORECASTING

7.7 If such forecasts are needed how can they best be made? The question of manpower supply may be left aside for the moment; here the problem will be that of forecasting manpower demand i.e. the amount and composition of future employment. The first question to be resolved is the size of unit for which projections should be attempted, whether for a firm, an industry, a whole sector (agriculture or industry) or for the whole economy. The more usual method is to adopt the individual industry, or industry group to be precise, as the unit.

7.8 Three main approaches may be used in attempting a projection of employment both in total and by occupation for each industry.[1] These are discussed briefly in the paragraphs that follow.

7.9 **Historical Approach** This method consists in developing a historical profile or 'picture' of the relationships which have existed for the industry group, as between changes in output and productivity on the one hand and the pattern of manpower usage on the other. In general, it seems broadly true that if labour is graded along a spectrum of skills, technical progress has the effect of increasing the proportion of the more highly qualified engaged in most industries. The actual analysis may be done either by using formal econometric methods or by simpler, more 'intuitive' methods, including discussions with industry specialists. In either case it is affected both by the availability of data and by the evaluation of historical experience in relation to future trends.

7.10 This latter point can be important in many instances, because past trends may be capable of several interpretations. Thus, if there has been a rise in the number of employees in any one group, one does not know whether this is primarily the result of a demand influence, an increase in the number of jobs which actually call for such workers, or whether it is a supply influence, that because workers in one particular group were available they were employed, whereas some other group would have been preferred had they been available.[2]

7.11 **'Structural' Approach** This approach takes two forms: the one dealing with the home economy, the other dealing with advanced economies elsewhere. In each case the manpower structure of the most advanced firms, in either the home or more advanced countries, is examined on an industry by industry basis, both as to present composition and past development. The assumption is that the remaining firms will in future years tend to develop manpower structures similar to those at present prevailing in the advanced firms—in other words, it is assumed that there is a time-lag in the behaviour of most firms. It may be, for example, that the present ratio of say, research staff to total employees in a leading firm may be a useful guide to the future position for the industry as a whole.

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[1] As this part of the art is still in its infancy and as the amount and accuracy of the available data is low in most countries, the description given here may be regarded as in part an expression of intent rather than a report of work systematically performed. The area is, however, developing with great rapidity.

[2] These demand/supply difficulties may also come about through shifts in the relative prices (wages) of different groups, as much as through shifts in their actual availability.

7.12 While such analyses and comparisons may be useful as partial indicators of future trends, they cannot and do not pretend to be a complete guide to future patterns. While they may give some indication for the majority of firms, they obvously do not say anything as to the future position of the advanced firms themselves. In addition, it is necessary to take account of changes in the overall industrial structure, which would result from the formation of new industries and the decline or cessation of existing ones. Because of such changes, it is probable that comparisons with more advanced countries would be more useful in Irish circumstances than comparison among firms within the country itself. Such international comparisons have been made as part of the present study. But while these may be useful in developing perspectives, they must always be used with caution. A mechanistic comparison will be of greater value the more the two countries concerned have in common in such matters as resource endowments, comparable knowledge of, and access to technological processes, comparable social, economic and institutional patterns and similar policy objectives.[3] Since it is highly improbable that any two countries would possess such a degree of similarity, it is clear that account must always be taken of the distinctive characteristics of each economy.

7.13 **Establishment or Survey Approach.** This approach is associated with its use in general economic forecasting. A sample of firms is chosen and the employers are asked for their estimates of future output, employment and occupational 'mix'. The replies are analysed by size and type of firm. They are aggregated, by assuming some projected distribution within the industry by size and type of firm at some future date, and the trends for each industry may then be projected. It will be evident that this method would not be adequate, if employed naively due to inconsistencies in the assumptions of the respondents. If however, as part of a comprehensive programme, a series of revised estimates were obtained after the initial tabulations of the data had been shown to the respondents, it seems possible that more reliable estimates could be developed.

TRANSLATION OF CHANGES IN REQUIREMENTS TO 'FLOW' DATA

7.14 Given that estimates showing the total labour force for a target date are obtained by the use of any or all of the three methods indicated, the results represent a number of jobs that have to be filled at this future date. Hence the difference between such figures and the data for employment in the initial period constitutes an estimate of the (net) 'new' (or extra) jobs available between the dates in question—this may be termed 'expansion demand'. To estimate, however, the number of *persons* who will *move* into the labour force in the intervening period it is also necessary to take account of:—

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[3] Indicators of the rate of change in occupational structure relative to economic growth may however, be rather independent of some of these factors. The evidence at present is inconclusive, mainly due to lack of data.

(a) those who will retire or die during the period,

(b) those in the labour force at the initial date who will resign in the period e.g. because of marriage or emigration.

(c) those who will enter the labour force after the initial period but resign before the target date.

Taken together these three groups give rise to what may be termed 'replacement demand'. Hence the total number of persons who will join the labour force in the period in question (the 'inflow' into the labour force) will be the sum of the 'expansion demand' plus the 'replacement'. This 'inflow' may in turn be thought of as coming from three sources.

(i) the educational sector

(ii) other non-labour force sectors (e.g. home duties)

(iii) immigration.

If items (ii) or (iii) are of any numerical significance, they must be taken into account before the 'flow' required from the educational sector can be estimated. The 'flow' into the labour force is in turn only part of the 'flow' out of the educational sector because this 'outflow' is itself composed of three parts:

(iv) the 'flow' to the labour force sector

(v) the 'flow' to the non-labour force sector

(vi) the 'flow' to emigration.

Hence to estimate the total outflow required from the educational sector it is necessary to estimate (1) the fraction of entrants to the labour force who come from the educational sector and (2) the fraction of leavers from the educational sector who will enter the labour force. It would be necessary of course, to allow for different patterns of movement both for different educational levels and different occupations, but the basic procedure would remain unchanged.

MANPOWER PROJECTIONS

7.15 Given this summary of the methods available for, and the factors associated with, manpower forecasting, we turn now to describe what has actually been done for the present survey. The framework of future economic development is outlined in the Second Programme for Economic Expansion[4] which relates to the period 1964/70. This Programme contains a projection of total employment[5] for 1970 broken down by major sectors (agriculture, industry and services) and by major industrial groups (textiles, chemicals, building, etc.). However, as much of the demographic data relating to these forecasts is derived from population censuses, we decided, for our particular purposes to adjust the Second Programme figures to the level expected to obtain as of April, 1971, (when a population census would be due).

7.16 The total employment figure on this adjusted basis is 1,132,500 (compared with 1,053,000 in 1961). The estimate of a 3½ per cent unemployment rate assumed in the Programme would give approximately 40,000 as the number of persons out of work and hence a total labour force of 1,172,500 in 1971 (compared with 1,108,000 in 1961). Given these estimates of employment both in total and for each major group the three main problems to be resolved were:—

(i) to obtain a breakdown by occupational skill, of total employment in each industry group,

(ii) to verify the compatibility of the manpower forecasts with detailed population and emigration forecasts,

(iii) to forecast the 'replacement' demand for each group, by skill level.

7.17 In general the 'historical' approach, supplemented where possible by the other methods, was used. The occupational classification adopted was determined by the data available from Census of Population material. Twelve socio/economic groups based on occupation, are used in the Census,[6] but for our purposes we have compressed them into the following seven categories: (1) professional and technical workers, (2) employers, managers and salaried employees, (3) intermediate non-manual (e.g. clerical workers), (4) skilled manual workers, (5) other non-agricultural workers, (6) agricultural workers, (7) farmers.[7] (For some tables the last three categories were aggregated).

CONFRONTATION—ADJUSTMENT OF INITIAL ESTIMATE

7.18 When the initial estimates were derived they were sent to the Economic Development Division of the Department of Finance

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[4] Stationery Office, Dublin 1964 (Pr. 7670).

[5] Slightly revised figures are given in the first Progress Report on the Programme published by the National Industrial Economic Council in November, 1964.

[6] For definition of the categories see Volume III—Occupations, Census of Population 1961.

[7] The term 'farmers' as used in this report includes assisting relatives.

(which is responsible for the Second Programme forecasting activities) for use in their confrontations with industry. They were also made available to the General Purposes Committee of the National Industrial Economic Council. Both of these groups gave us their comments on the estimates presented and where necessary adjustments were made in the light of these comments. The team is, however, solely responsible for the estimates now presented relating to the occupational distribution of the labour force. The figures for total persons at work are naturally, derived from those used in the Second Programme for Economic Expansion (with adjustment from 1970 to 1971).

7.19 Table 7.5 summarises for 1961 and 1971, the total labour force classified by major sectors of economic activity and by socio-economic groups. The main point illustrated by these data is that as a result of expected changes in relative employment levels in each sector, there will be a corresponding change in the socio/economic composition of the labour force. The numbers employed in industry and services are expected to rise sharply, while the numbers in agriculture are expected to fall. Since industry employs more professional and technical workers than does agriculture, the socio/economic composition of the labour force is projected as showing an increased proportion in the numbers in these skilled categories.

7.20 The professional and technical group may be considered in somewhat greater detail, since this category gives rise to the greatest difficulty from an educational viewpoint. Accordingly, Table 7.6 has been prepared giving an estimated breakdown of this group from 1926 to 1976.*

7.21 The projected figures for 1966, 1971 and 1976 were derived by examining the distribution of persons in the professional and technical category by occupation and industrial group in 1961 and applying a similar distribution to the 1971 projection (the distribution for 1961 is given in Appendix VII. A. Table 5).

COMPATIBILITY OF MANPOWER REQUIREMENTS WITH ESTIMATED POPULATION IN 1971

7.22 The relationship between the total manpower requirements and the number of persons available to meet these requirements in 1971 is shown in the tables 7.7 and 7.8 and in Appendix VII. B. The tables show the distribution of the 1971 population by type of activity (labour force, not yet at work, full-time education, others not in the labour force, remainder not gainfully occupied) and for male, female and total population, the numbers in the labour force and the percentage participation in the labour force (male or female) by age group, for chosen years from 1951 to 19766.

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*The figures for the earlier years were adjusted in some cases to accord with the definitions used in the 1961 census. Projections for 1976 were extrapolated from the 1961/71 trends.

7.23 There is a relationship between (i) projected rates of emigration and death—and consequently the composition of the population of working age, classified by age and sex; (ii) the labour force participation rate for each age/sex group and (iii) the total labour force requirements at a target date. Various combinations of emigration, death and participation rates would be compatible with any given total labour force. The particular combination of rates chosen for this survey is that which appears most compatible with current trends, taking all the various factors into account. The hypotheses relating to emigration are compatible with the assumptions in the Second Programme and with current (1961-1964) trends in net passenger balance. The projected death rates represent a continuance of present trends (in each age/sex specific group) and may be regarded as provisional, until the Life Table based on the 1961 Census of Population is available and projected.

7.24 The main features in the participation tables are (i) a decrease in labour force participation by the younger age groups (ii) an increase in the overall participation of females in the labour force. The first is accounted for, both by the projected increase in the school-leaving age to 15 by 1970, and by the increasing trend to longer ' voluntary ' education. As regards the increase in female participation, it has been found in other countries that female participation increases as economic conditions improve. This is particularly true in the early years of rising affluence.

TABLE 7.5

Summary of Manpower Position 1961 *and as Projected for* 1966, 1971 *and* 1976 ('000's)

Major Sector	Year	Total	Socio-economic group						
			Professional and Technical Workers[1]	Employers, Managers and Salaried Employees	Skilled Manual Workers	Intermediate Non-manual Workers[1]	Farmers etc.	Agricultural Workers, Turf Workers, Foresters and Fishermen	Other (mainly unskilled)
Agriculture (including Forestry and Fishing)	1961	378·7	0·4	0·9	—	—	319·9	57·3	—
	1966	350·0	0·4	1·0	—	—	300·5	48·1	—
	1971	320·0	0·5	1·0	—	—	279·0	39·5	—
	1976	290·0	0·5	1·0	—	—	256·5	32·0	—
Industries	1961	258·8	5·5	10·1	105·9	19·0	—	4·0	114·3
	1966	294·5	7·7	12·5	121·0	25·1	—	4·5	123·7
	1971	332·5	10·8	15·0	137·5	31·5	—	5·0	132·7
	1976	377·0	14·3	18·0	156·5	40·5	—	5·5	142·2
Services	1961	415·0	72·0	31·0	22·0	148·3	—	5·0	136·7
	1966	446·5	81·4	32·5	24·5	159·0	—	5·0	144·2
	1971	480·0	92·7	34·0	27·5	169·0	—	5·0	151·8
	1976	523·5	104·7	36·0	31·0	183·0	—	5·0	163·8
Total at Work	1961	1,052·5	77·9	42·0	128·0	167·3	319·9	66·5	250·9
	1966	1,091·0	89·5	46·0	145·5	184·1	300·5	57·6	267·8
	1971	1,132·5	104·0	50·0	165·0	200·5	279·0	49·5	284·5
	1976	1,190·5	119·5	55·0	187·5	223·5	256·5	42·5	306·0
Unemployed	1961	55·6	0·9	—	6·0	4·0	—	12·0	32·6
	1966	49·0	—	—	5·0	4·5	—	8·5	31·0
	1971	40·0	—	—	4·0	4·0	—	5·0	27·0
	1976	32·0	—	—	3·0	3·5	—	2·5	23·0
Total Labour Force	1961	1,108·1	78·8	42·0	134·0	171·3	319·9	78·4	283·6
	1966	1,140·0	89·5	46·0	150·5	188·6	300·5	66·1	298·9
	1971	1,172·5	104·0	50·0	169·0	204·5	279·0	54·5	311·5
	1976	1,222·5	119·5	55·0	190·5	227·0	256·5	45·0	329·0
Total Non-Agricultural (at work) (i.e industries and services)	1961	673·8	77·5	41·1	128·0	167·3	—	9·0	250·9
	1966	741·0	89·1	45·0	145·5	184·1	—	9·5	267·8
	1971	812·5	103·5	49·0	165·0	202·5	—	10·0	284·5
	1976	900·5	119·0	54·0	187·5	223·5	—	10·5	306·0

[1] Draughtsmen included with Professional and Technical Workers.

TABLE 7.6

Professional and Technical Personnel, Projected to 1976

(1961 Definition)

(000's)

	1926	1936	1946	1951	1961	1966	1971	1976
Physicians, Surgeons and Dentists.	2·6	2·5	3·2	3·4	3·5	3·7	4·0	4·3
Other Medical Personnel Pharmacists and Dispensers.	8·2	9·8	13·0	15·5	16·9	17·8	19·0	20·2
Higher Technical (Medical).	0·2	0·3	0·4	0·5	0·9	1·4	2·0	3·0
Veterinary Surgeons ..	0·3	0·3	0·4	0·5	0·7	0·8	1·0	1·2
Religious	15·7	17·5	20·5	20·3	22·0	23·9	25·8	27·9
Teachers (Lay) ..	16·9	17·2	15·5	16·0	18·3	20·4	22·8	25·4
Engineers, Surveyors and Architects†	1·1	1·3	2·1	2·6	3·8	4·5	5·5	6·6
Scientists†	0·3	0·3	0·4	0·5	1·3	2·3	4·0	7·0
Draughtsmen† ..	0·1	0·2	0·3	0·6	0·8	1·0	1·5	2·0
Technical n.e.s.† ..	n.a.	n.a.	n.a.	0·7	2·0	3·2	5·0	8·0
Professional n.e.s. ..	3·2	3·6	3·8	4·7	5·3	6·0	7·0	8·4
Accountants	0·7	1·0	1·7	1·8	2·4	2·7	3·2	3·7
Librarians	0·1	0·2	0·3	0·4	0·4	0·5	0·7	0·9
Social Welfare Workers	n.a.	n.a.	n.a.	0·4	0·5	0·7	1·0	1·4
Total Professional and Technical (including draughtsmen).	51·0	55·5	63·5	67·9	78·8	89·5	104·0	119·5
Total Labour Force (1961 definition).	1,299	1,331	1,290	1,262	1,108	1,140	1,172·5	1,222·5
				Perce	ntage			
Professional and Technical as percentage of total labour force.	3·9	4·2	4·9	5·4	7·1	7·8	8·9	9·8
Total Scientific and Technical (total of items marked†) excluding Medical etc. (000)	n.a.	n.a.	n.a.	4·4	7·9	11·1	16·0	23·6
				Perce	ntage			
Scientific and Technical as percentage of Professional and Technical.	n.a.	n.a.	n.a.	6·5	10·0	12·4	15·4	19·7
Scientific and Technical as percentage of total labour force.	n.a.	n.a.	n.a.	0·35	0·71	0·97	1·36	1·93

Note: n.e.s. not elsewhere shown. n.a. not available

Figures for earlier years have been adjusted as necessary to accord with the definitions used in the 1961 Census.

TABLE 7.7

Distribution of Population aged 14 *years and over by Major Sectors,* 1951, 1961 *and* 1971, *Males* ('000)

Year	Total	14 years	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65 and over
	Population												
1951 ..	1,096·9	26·7	125·7	105·4	99·6	96·5	102·3	94·0	82·4	82·9	65·0	61·4	155·0
1961 ..	997·5	29·7	120·3	80·4	72·3	75·3	81·6	84·8	89·0	81·7	68·6	64·5	149·3
1971 ..	1,043·0	29·0	139·0	126·0	94·0	69·0	66·0	70·0	75·0	77·0	78·0	67·0	153·0
	Labour Force												
1951[1] ..	939·4	7·9	90·8	97·8	95·7	94·2	99·8	91·4	79·1	78·8	60·3	53·1	90·5
1961 ..	821·5	7·0	77·4	72·4	69·6	73·3	79·6	82·5	86·5	78·0	63·2	55·1	76·9
1971 ..	839·0	—	83·4	114·4	90·6	67·2	64·4	68·0	73·0	74·0	71·0	56·5	76·5
	In Full-time Education—over 14 years												
1951[1] ..	40·2	11·7	22·5	4·7	1·1	0·2							
1961 ..	59·4	18·2	33·6	6·1	1·2	0·3							
1971 ..	95·0	28·5	54·0	10·0	2·1	0·4							
	Not yet at work												
1951 ..	17·3	6·3	10·9	0·1	—	—							
1961 ..	11·9	3·6	7·5	0·6	0·1	0·1							
1971 ..	1·8	—	1·2	0·5	0·1	—							
	Residual not gainfully occupied (and not already accounted for in other sectors)												
1951[1] ..	100·0	0·8	1·5	2·8	2·8	2·1	2·5	2·6	3·3	4·1	4·7	8·3	64·5
1961 ..	104·7	0·9	1·8	1·3	1·4	1·6	2·0	2·3	2·5	3·7	5·4	9·4	72·4
1971 ..	107·2	0·5	0·4	1·1	1·2	1·4	1·6	2·0	2·0	3·0	7·0	10·5	76·5

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[1] Adjusted to 1961 definitions.

TABLE 7.8

Distribution of Population aged 14 *years and Over by Major Sectors* 1951, 1961 *and* 1971, *Females* ('000)

Year	Age											
	Total	14 years	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65 and over
	Population												
1951 ..	1,061·7	26·0	115·5	96·9	98·8	95·1	98·6	86·3	78·5	80·1	63·8	60·7	161·4
1961 ..	1,001·1	27·8	113·5	77·6	73·1	77·5	85·2	85·5	85·6	75·4	67·5	66·6	165·8
1971 ..	1,060·0	28·0	131·0	119·0	91·0	68·0	68·0	73·0	79·0	79·0	78·0	65·0	181·0
	Labour Force												
1951[1] ..	323·0	5·0	62·9	62·2	40·9	25·7	20·8	17·4	16·6	17·0	13·9	13·2	27·4
1961 ..	286·6	4·9	61·1	52·1	28·3	18·6	16·3	16·4	17·2	16·6	15·5	14·7	24·9
1971 ..	333·5	—	67·0	89·2	37·5	17·0	13·9	15·0	16·6	18·2	17·8	14·3	27·0
	In Full-Time Education—over 14 years												
1951[1] ..	40·7	13·3	25·7	1·5	0·2								
1961 ..	57·0	18·6	36·1	2·0	0·3								
1971 ..	89·8	27·5	58·6	3·3	0·4								
	Not yet at work												
1951 ..	18·7	4·0	14·4	0·3	—	—							
1961 ..	10·1	1·9	7·3	0·7	0·1	0·1							
1971 ..	2·9	—	2·2	0·6	0·1	—							
	Residual not gainfully occupied (and not already accounted for in other sectors)												
1951[1] ..	679·3	3·7	12·5	32·9	57·7	69·4	77·8	68·9	61·9	63·1	49·9	47·5	134·0
1961 ..	647·4	2·4	9·0	22·8	44·4	58·8	68·9	69·1	68·4	58·8	52·0	51·9	140·9
1971 ..	633·8	0·5	3·2	25·9	53·0	51·0	54·1	58·0	62·4	60·8	60·2	50·7	154·0

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[1] Adjusted to 1961 definitions.

7.25 The following table (Table 7.9) shows the population (under 14 years of age and 14 years and over) by type of activity, for 1951, 1956, 1961 and the projected figures for 1966, 1971 and 1976.

TABLE 7.9

Distribution of Population, age 14 and over, by Type of Activity ('000's)

Year	Population under 14 years of age	Population of 14 years of age and over				Percentage Distribution of population 14 and over by type of activity			
		Labour Force	Full-time Education and Not Yet at Work	Others Not in the Labour Force	Total	Labour Force	Full-time Education and Not Yet at Work	Others not in the Labour Force	Total
1951	802·1	1262·4	116·9	779·3	2158·6	58·5	5·4	36·1	100·0
1956	818·3	1185·2	128·0[1]	767·1[1]	2080·3	57·0	6·2	36·8	100·0
1961	819·8	1108·1	138·4	752·1	1998·6	55·4	6·9	37·6	100·0
1966	819·8	1140·0	157·4	734·8	2032·2	56·1	7·7	36·2	100·0
1971	836·0	1172·5	189·5	741·0	2103·0	55·8	9·0	35·2	100·0
1976	863·4	1222·5	215·5	739·6	2177·6	56·1	9·9	34·0	100·0

[1] Estimated.

7.26 The most striking figure in the above table is probably the increase in the percentage of the population in 'full-time education and not yet at work'. As indicated in paragraph 7.24 the figures for 1971 and later years take into account the raising of the school-leaving age to 15 years.

7.27 We may summarise portion of the above table in the following form, which shows the labour force, broken by male and female, as a percentage both of the total population and the population 14 years and over.

TABLE 7.10

Labour Force,as Percentage of Population aged 14 *and over, and of Total Topulation,* 1951–76

Year	Males		Females		Total	
	Labour Force as Percentage of Population 14 and Over	Labour Force as Percentage of Total Male Population	Labour Force as Percentage of Population 14 and Over	Labour Force as Percentage of Total Female Population	Labour Force as Percentage of Population 14 and Over	Labour Force as Percentage of Total Population
1951	85·6	62·4	30·4	22·2	58·5	42·6
1956	84·1	60·2	29·5	21·2	57·0	40·9
1961	82·4	58·0	28·6	20·4	55·4	39·3
1966	81·8	57·8	30·7	22·0	56·1	40·0
1971	80·4	56·9	31·5	22·7	55·8	39·9
1976	79·8	56·5	33·0	23·6	56·1	40·2

7.28 We have discussed in some detail the manpower requirements for 1971. Table 7.5 of this chapter has shown the projected 'stock' position in that year. The following table helps to give an indication of the numbers who will need to flow into the labour force in the ten year period 1961—1971 in order to meet the manpower requirements. This table shows demand classified by expansion and replacement.

TABLE 7.11

Projected Total Manpower Demand 1961–1971 *by Major Socio/ Economic Categories*

(000's)

Nature of Demand	Professional and Technical (1)	Employers, Managers, Salaried Employees (2)	Skilled Manual Workers (3)	Intermediate non-Manual (4)	Farmers, Agricultural Workers and Other (5)	TOTAL (6)
Expansion ...	25	8	35	33	—37	64
Replacement	15	12	45	80	234	386
TOTAL ...	40	20	80	113	197	450
Annual Rate	4	2	8	11	20	45

7.29 The derivation of this table is discussed in Appendix VII.C. It will be seen there that the resignation component is relatively high compared with the retirement component (which implicitly also includes withdrawals due to death). Four relevant points may be mentioned in this context. Firstly, many young people in rural areas, particularly boys, spend a few years on a farm either as assisting relatives or agricultural workers and then emigrate. This would also seem to occur in some 'dead-end' jobs. Secondly, many girls have a short 'working life' in that they join the labour force after leaving school, work for a few years and then leave the labour force either to marry or emigrate. Thirdly, a number of women return to the labour force on the death of their husbands. This would appear to happen primarily in agriculture, in the hotel, restaurant and boarding house industry and in some other service trades. Fourthly, it seems likely that since women are marrying at significantly younger ages, there may be a greater tendency for such women to rejoin the labour force when their families have grown up. This seems to be the trend in many countries. Due to the absence of data, however, the latter two factors could be taken into account only to a very limited extent.

HIGHLY QUALIFIED MANPOWER

7.30 It is not proposed to give a table for flows of high-level manpower, comparable with the stock situation shown in Table 7.6, however desirable this would be, owing to difficulties in estimating the figures.

7.31 The problem of the increasing international mobility of highly qualified manpower is one which exists for all countries to some extent. It creates particular difficulties for countries such as Ireland which supply highly qualified manpower to other wealthier economies.[9] In this respect Ireland is in a special position; one which has many advantages for some of its people, but one which carries some disadvantage for the society in general and provides a difficult problem for framers of educational policies.

7.32 If the people of the countries of the world are classified by national income per head, all of the first fifteen countries, representing 440 million people, speak either English or another European language. Of these countries, six representing 290 million people, are English speaking: they have a total estimated G.N.P. of $750 billion or $2,600[10] per head. The other nine countries, representing 150 million people with a total G.N.P. of $200 billion or $1,300[10] per head, speak another European language. In general, apart from (largely temporary) personnel engaged on organised technical assistance projects or foreign investment projects, highly qualified manpower moves from the poorer countries (where the need is greater but the opportunity less) to the wealthier countries. However due (a) to restrictions on immigration into wealthier countries, frequently based on considerations of colour and (b) to the problems of language, mobility even of highly qualified manpower is relatively low. Ireland however, is in the position of being the poorest (in terms of income per head)[11] country of those who are both English-speaking and whose emigrants are accepted virtually without any effective immigration or social restriction in any of the wealthy English-speaking countries already mentioned. In addition, Ireland is geographically adjacent to the second largest of these countries (Great Britain) and has special ties with the largest and wealthiest (U.S.A.). Ireland has also a well established missionary tradition in English-speaking countries, wealthy and poor, and a tradition of professional service abroad. Hence the international mobility of highly qualified Irish personnel is considerable.

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[9] It is not overlooked that Ireland also acts as a source of supply of unqualified manpower for these economies. In this context this does not create a special problem since we are considering only the outflow of qualified persons for manpower reasons; the basic level of education given to all must be decided primarily by general, social and educational objectives and not merely on manpower considerations.

[10] Estimates for 1961.

[11] Approximately $600 in 1961. (Statistical Abstract, 1964).

7.33 The problems to which this mobility gives rise are many: in the context of education the major implication is that so long as emigration continues it is necessary to ' over-produce ' highly qualified people.[12] The actual rate of over-production (which may need to vary from one speciality to another) must be determined on general, social and economic grounds. No doubt, better statistical data on current and historical trends would be useful, as would some exercises dealing with the implications of various alternative projections. It is likely, however, that any detailed long-term forecasts relating to required outflows of specified ' graduates ', would have only a very limited accuracy or utility. Furthermore, this mobility is probably positively associated with qualification, in that the higher the qualification the greater the mobility. Finally, it operates both ways, so that for a variety of reasons, many highly qualified Irish graduates leave Ireland for a period of years—sometimes to gain specialised post-graduate qualifications or professional experience—and then return to the Irish labour force.

7.34 This mobility applies not only to highly qualified university graduates,[13] but also to almost all grades of qualified persons—a particular example of importance in recent years being skilled workers in the building industry. Movements are of course, responsive to economic circumstances and in this sense we may say that salary and wage differentials abroad, particularly those in Britain, are to some extent ' imported ' into Ireland and exert an influence on the domestic pattern.

REVISION OF ESTIMATES

7.35 The estimates given in this chapter are presented in a form which will, it is hoped, facilitate continual revision and updating. In particular, when for any reason revised figures for an industry group are available, the present estimates can be deleted and the revised ones inserted. The revised total for the labour force by skill composition can then be readily derived. This means that partial revisions of the figures are quite feasible and it is not necessary to wait for a total re-evaluation to adjust them. This would appear to have important practical consequences in our present situation in Ireland. As this is the first overall exercise in manpower forecasting for the Irish economy, it is to be expected that it will encourage various experts to make more detailed projections than hitherto in their own fields. We will not be surprised, therefore, if a subsequent stage of revision following publication of our efforts is required before any forecasts gain wide and general acceptance.

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[12] i.e. It is necessary to decide that *as a minimum* we will attempt to produce X per cent more of people with specified qualifications than would be necessary to meet domestic needs.

[13] In certain special cases (of categories employed primarily by, or in association with, the public sector), the mobility may be one way only, as employment conditions are generally such as to constitute an effective barrier to re-entry.

7.36 To facilitate such revisions, estimates for 1966 have also been prepared. The Census of Population in 1966 will enable the estimates to be checked for general validity at a relatively early stage. Any serious adjustments required can then be made and decisions taken in the light of these forecasts can be re-evaluated. In view of (i) the paucity of data in many areas, (ii) the variety of methodological problems that remain for further research, (iii) the difficulties of economic and social interpretation of historical statistical trends, and (iv) the inherent difficulties in forecasting, it seems desirable that such interpolations should be presented when any forecasts, likely to affect public policy are made.

CHAPTER EIGHT

Manpower: Comparison of Requirements and Supply by Educational Levels

8.1 In this chapter a comparison will be attempted between the manpower requirements indicated in the previous chapter and the expected educational levels of the population. Such a comparison implies a 'conversion' of manpower requirements (expressed in terms of socio/economic groups) into educational terms—specifically, into the general level of educational qualification 'required' for each occupational level. There have been few studies of a type which would enable statements to be made with any degree of confidence as to the minimum level of education 'required',—in the sense of being most effective,—for any given occupation or group of occupations. Indeed, as is indicated in chapter 15, the problem is not a simple one and any answer to it is always relative to the circumstances of the time and place. The problem is complicated by such factors as the conventions which have grown up relating occupations to certain types of educational preparation, the long period which elapses between leaving the education sector and completion of working life, the extent to which further education and training while 'on the job' make up for educational 'deficiencies', the extent to which much of the education actually received is relevant to proficiency of operation in employment and so forth.

8.2 The approach which has been adopted for this purpose in several countries has been to prepare for the labour force as a whole an estimate of target education levels for each occupational group. This target of the educational 'requirements' of the labour force is then compared with the expected numbers of persons with corresponding educational characteristics. Such a comparison would give a measure of expected deficiencies which, when corrected for emigration and immigration of qualified persons and expressed in the form of annual averages, would define an incremental target which the educational system might be encouraged to provide over a given period. In other words it would indicate 'desirable' changes in the net output of the educational system in order to eliminate the educational deficiencies of the labour force. There are several reasons why we did not follow this approach. One was the absence of data on the educational level of the population, and secondly, there is a need to allow for the non-labour force sector of the population. In our circumstances it is doubtful if such 'stock' targets are the most useful ones for economic development programmes. Since such programmes are concerned with changes over a given number of years, it may be more appropriate to concentrate on the 'flow' of persons into and out of the labour force during the plan period. Accordingly, we have directed our efforts towards these 'flow' aspects.

FACTORS INFLUENCING CHOICE OF 'TARGET'

8.3 In order to discuss the problem in quantifiable terms a 'target' (educational) attainment for each occupational group has of necessity to be defined. Apart from the factors listed above the choice of any particular target may be influenced by a number of considerations: (i) defined and accepted standards where such are available (e.g. intermediate or group certificate as an entry requirement to apprenticeship in certain trades) and reasonable deductions from them, e.g. the extension of this requirement to almost all forms of apprenticeship by a given date, (ii) knowledge of what advanced competitor countries are achieving or hoping to achieve by a target date, (iii) projections of actual current trends (if known) in educational/occupational relationships, (iv) employers' requirements as expressed, for example, in educational standards specified in job advertisements or in statements as to the educational targets which they specify or will seek to specify for given occupations. In the absence of more comprehensive studies such methods provide a basis for determining a 'reasonable' target structure.

ACTUAL TARGET SUGGESTED

8.4 Table 8.1 presents the target set of educational/occupational relationships adopted for comparisons relating to the period 1961/71. Various alternative hypotheses as to desirable target structure might, of course, have been suggested. The table, however, would appear to be broadly compatible with a 'reasonable' development of existing conventions and trends. The data available from the leavers survey (chapter 6) indicate that the targets are generally not unrealistic. Much higher targets could reasonably have been selected in many cases. In particular, if modifications are made in coming years in the conventional age of entry to apprenticeship in skilled trades and the length of training allowed to vary with level of education at entry, it would seem desirable for a proportion of new entrants to apprenticeship to have a general or technical leaving certificate. However, our intention was to be on the conservative side so that the targets would constitute a statement of the minimum rather than maximum educational levels appropriate for present-day conditions.

TABLE 8.1

Flow Target Educational Pattern for inflows by Major Occupational Categories, 1961–1971

Major occupational category	Percentage distribution of inflows by highest qualification held				
	No post/ Primary Qualification	Post-Primary		Third Level Qualification	Total
		Junior Certificate	Senior Certificate		
Professional and Technical, including Draughtsmen and other Technicians	—	—	35	65	100
Employers, Managers and Senior Salaried Employees.	—	20	60	20	100
Other Clerical (Intermediate non-manual).	—	70	30	—	100
Skilled manual workers.	40	60	—	—	100
Farmers	65	20	10	5	100
Others in the labour force.	65	30	5	—	100
Non-labour force (home duties, emigration etc.). 14 years of age and over[1].	67	16	12	5	100

[1]The target for these categories is chosen to be equal to the expected supply (movements) to these sectors.

8.5 It may be noted that educational groupings have been made on the basis of the highest qualifications held by individuals. Thus, a person who has a primary certificate and who has also received some post-primary education, but has not obtained any post-primary certificates, would be recorded in the first category 'no post-primary qualification'. To this extent the certificate status may be said to understate the actual amount of education which people will have received. It is felt that this is compensated for by the fact that the targets are relatively modest ones. It will also be noticed that while one educational level is, in a sense, taken as being typical for each group, it is also assumed that some fraction of persons in each group would come from other educational levels. Thus, it is assumed that the majority of clerical workers would have junior level post-primary qualifications, but that some fraction of the group would have other educational qualifications.

FLOW COMPARISONS

8.6 The following table shows the estimated outflow from the full-time education sector by level of qualification. The figures are given in the form of annual averages for each five year period from 1951 to 1971. This table thus provides a basis for estimating the supply of persons with various educational qualifications entering the labour force during the decade 1961/1971.

TABLE 8.2

Annual Average Outflow from the Educational Sector of Certificants and Non-Certificants in 1951–71 by Highest Level of Certificate

('000)

Five Year Period	No Certificate	First Level Certificants	Second Level Certificants		Third Level Certificants	Total Certificants	Total Annual Average Outflow[1]
			Junior	Senior			
1951/2–1955/6 ...	29·7	14·3	6·7	3·5	1·8	26·3	56·0
1956/7–1960/1 ...	23·9	15·1	8·2	4·7	2·1	30·1	54·0
1961/2–1965/6 ...	18·0	13·0	11·0	7·0	3·0	34·0	52·0
1966/7–1970/1 ...	12·0	11·0	13·0	10·0	4·0	38·0	50·0

[1] This column shows the average total outflow from the educational sector (with or without a certificate).

8.7 It is estimated that of the 510,000 people who will leave the full-time educational sector during the 1961-71 decade 450,000 will enter the labour force and 60,000 will not. Of those who do, it is estimated that 250,000 will flow into one or other of the non-agricultural 'skilled' categories, i.e. professional and technical, employers, managers, senior salaried employees, clerical and sales workers and skilled (industrial) workers. With the help of some assumptions based in part on the data on school leavers discussed in chapter 6, the percentage of the post-primary certificants who do not enter the labour force has been estimated. On this basis, Table 8.3 has been compiled, relating certificant status to labour force participation.

TABLE 8.3

Estimated Absorption into the Labour Force of Educational Leavers by Certificant Status and Absorption Sector, 1961/71

('000)

Certificant Status (Highest level attained)	TOTAL Outflow from educational sector	Absorption Sectors			Non-labour force including direct emigration
		Non-Agricultural labour force 'Skilled'[1]	Other labour force	Total labour force	
Post-Primary Certificate[2]	240	210	10	220	20
Primary Certificate ...	120	40	60	100	20
No Certificate ...	150	—	130	130	20
TOTAL ...	510	250	200	450	60

[1] As specified in paragraph 8.7.
[2] Including some third level.

8.8 With the projected 'supply' of persons to the various sectors of the economy derived, this may now be compared with the 'requirements'. If the 'target matrix' (Table 8.1) is used to translate occupational terms into educational terms, the following table expresses the resulting comparison between the actual educational qualifications of those entering the labour force as shown in Table 8.3 and the 'target' qualifications which such persons might be expected to possess.

TABLE 8.4

Summary of Supply and Demand by Educational Qualifications. Flow Comparison—1961–71. ('000)

Category	Total	Third level Certificants	Second level		No Post-Primary Qualifications
			Senior Certificate	Junior Certificate	
Total Supply	510	35	85	120	270
Expected supply to Non-Labour Force[1]	60	3	7	10	40
Total Supply to Labour Force	450	32	78	110	230
Labour Force Demand ...	450	31	73	186	160
Total Demand[2]	510	34	80	196	200
Labour Force Surplus or Deficit	—	+1	+5	−76	+70
Average Annual Surplus or Deficit	—	neg.	+0·5	−7·6	+7·0

[1] Including direct emigration. neg. = negligible.

[2] Non-labour force demand is taken as equal to expected supply to the non-labour force (including direct emigration).

8.9 It will be seen from these tables that the projected outflow from the educational sector would not suffice to attain the target levels for some of the categories, particularly the junior post-primary certificate stage. It is estimated that of the total outflow during the decade from the educational sector, 30 per cent will have no qualification, 25 per cent will have at most a primary certificate, 38 per cent will have at most a second-level certificate while 7 per cent will have a third level qualification (Table 8.2). It should be noted that a liberal view has been taken of the inflow of certificants into the labour force. If more of the certificants were to be outside the labour force, the deficits would, of course, be greater. This may or may not be felt to provide a basis for seeking to expand activity in the appropriate categories. It is necessary to emphasise once again the rather inadequate statistical base for many of these calculations. When allowance is made for this the conclusion may none the less still be that even from a narrow manpower viewpoint the average qualification level of those completing their education during the present decade can hardly be considered excessive. If the line of reasoning advanced elsewhere (chapter 15) is accepted, it would seem that there are other ways in which economic activity may be fostered by education and that there may be good grounds for claiming that the existence of a high general level of education of itself acts as a spur to the further expansion of an economy. If this is so, then in general it would be preferable to over-estimate rather than under-estimate the 'target' educational levels for various employment groups and aim accordingly at the expansion of education, whether in general or in specific fields.

8.10 It is worth repeating the nature of the 'targets' adopted. They are the result of a combination of social, economic and institutional factors. Given the information at our disposal regarding the requirements for entry into various occupations, in so far as these relate to educational levels, the targets seem not unreasonable. In developing these targets, however, we did not attempt to relate productivity rates to any specific level, or combination of levels, of education. The targets put forward are not then intended to relate solely to economic factors.

8.11 For the reasons indicated in paragraph 8.2, we did not attempt to base our assessment of educational requirements on the total labour force. It may, nevertheless, be of interest, in view of the rapid growth in the numbers of persons possessing post-primary and higher qualifications, to present some data on the age-composition of persons with such qualifications, together with a projection of the position beyond 1971 to obtain some indication of the subsequent rate of growth. Such data may be useful in forming a perspective against which to assess our 'flow' targets.

8.12 No statistics setting out the existing or historical situation regarding the educational qualfications of the population of Ireland were available to us—it has not been the practice to include questions relating to educational attainment in the various Population Censuses. However, we prepared a preliminary estimate of the existing stock of persons in Ireland by age, sex and general educational qualifications. (A description of the methods used and further details are given in Appendix VIII.A). These estimates were then related to the labour force participation of the population by assuming, for want of indicators, that within each age/sex category, participation in the labour force was independent of educational qualification. Given these estimates of the educational levels of the population and the labour force at different points of time, estimates of the rate of change in educational levels can be obtained. The following table summarises the results of these estimates for the years 1961, 1966, 1971 and 1976, in respect of persons possessing post-primary (and higher) qualifications, showing the estimates for each age group separately.

TABLE 8.5

Estimated Number of Persons with a Post-primary Certificate by Age Group

('000)

Year	15–19	20–24	25–29	30–34	35–39	40–44	45–49	50–54	55–59	60–64	65 and over	TOTAL
1961 ...	50·2	44·6	30·5	22·0	17·9	14·1	8·8	4·6	2·6	1·5	0·7	197·4
1966 ...	68·8	75·4	40·1	28·6	21·1	17·0	13·5	8·4	4·2	2·3	1·2	280·6
1971 ...	83·1	108·9	71·2	38·7	28·1	20·6	16·5	12·9	7·8	3·8	2·0	393·6
1976 ...	101·2	133·7	103·2	68·9	37·9	27·3	19·8	15·7	12·1	7·1	3·1	530·0

8.13 The above table probably underestimates the existing level of education of the population for two reasons: (i) as in paragraph 8.5 educational classification has been made on the basis of certificates held by individuals, (ii) as noted in Table 7.3, the proportion of persons born outside the State who hold professional, technical and administrative posts, is relatively high. These people may be expected to hold correspondingly high educational qualifications and are probably, for the most part, not included in the above table. It may be noted that these limitations apply also to Table 8.6. On the other hand, it is probable that if the data were adjusted for these factors, the rate of growth of qualified persons would be lower. The actual types of qualifications which the age groups shown in Table 8.5 are estimated to hold are as follows:

TABLE 8.6

Estimated Numbers in the Population with a Post-primary Certificate by Highest Type of Certificate

('000)

Year	Group Certificate	Intermediate Certificate	Total Junior Certificates	Leaving Certificate[1]	University Degree	TOTAL
1961 ..	27·1	83·2	110·3	60·6	26·5	197·4
1966 ..	51·2	107·6	158·8	88·4	33·4	280·6
1971 ..	87·0	133·4	220·4	129·9	43·3	393·6
1976 ..	134·0	154·9	288·9	186·3	54·8	530·0

[1] Including those with third level qualifications other than a university degree.

8.14 These two tables illustrate the rapid growth which is expected to take place in the numbers of persons holding various types of qualification. It will be seen, for example, that the total number with post-primary certificates is expected to double over the decade 1961/71. The effect which such increases would have on the educational composition of the adult population and of the labour force, may be illustrated by the following table.

TABLE 8.7

Estimated Proportion of Post-Primary Certificants (a) *in the Adult Population,* (b) *in the Labour Force*

Year	Post-Primary Certificants as percentage of population aged 15 and over		Post-Primary Certificants in labour force as percentage of total labour force	
	Male	Female	Male	Female
1961	9·9	10·5	10·2	15·7
1966	13·7	14·7	14·1	21·6
1971	18·5	20·0	19·3	28·6
1976	24·0	26·0	25·2	35·4

8.15 Despite this rapid growth in the proportion of post-primary certificants, a considerable time (at least three decades) would elapse before their number would rise to a level comparable with the 'target' level used earlier for new entrants to the labour force during the decade 1961/71. Thus if the educational targets given in Table 8.1 are applied to the *whole* of the projected 1971 labour force, there would be 'deficits' of 340,000 in the number of persons with junior post-primary, 160,000 with senior post-primary, and 90,000 in the numbers with third level qualifications. This illustrates in a striking manner the rapidity with which educational levels have been rising during the past half-century.

8.16 The position emerging from the foregoing examination may be summarised briefly. Our flow targets for the decade 1961/71 were based on contemporary requirements for the various occupations either as prescribed by the relevant vocational institutions or as suggested by current standards. Our analysis reveals that there will be an appreciable deficit in regard to these educational requirements in the present decade. These deficits relate solely to persons entering the labour force during the decade. The deficits would be much more serious if any account were to be taken of the fact that the educational composition of the total labour force falls far short of the contemporary educational requirements on which our flow comparisons were based. If the proposition that education has a beneficial effect on productivity is accepted, measures which tend to bring the educational levels of the labour force as a whole closer to present-day standards should be promoted.

TYPES OF EDUCATIONAL 'DEFICIT'

8.17 The conclusion which emerges is that, in terms of the targets specified, certain education 'deficits' exist in the present labour force, and will continue to persist (though on a much reduced scale) among persons entering the labour force during the decade 1961/71. Action to remedy those 'deficits' might equally proceed along both lines, that is, programmes might be introduced for the further education/training of persons in the labour force, while measures might also be taken to provide more education for persons at present in the educational sector. This latter procedure will be discussed in chapter 12 in conjunction with other possible changes suggested by the analysis of other chapters. It may be useful therefore, to consider briefly the question of courses of a type relevant to their present or prospective occupations for those already in the labour force.

8.18 The problem may be thought of as having three main aspects:—

(i) 'Deficiencies' in basic education:

The investigation of the occupational distribution and the educational level of the labour force (within each age/sex category) indicated that there were significant 'deficiencies' in the educational levels of many persons, given present standards and the stated targets. Such 'deficiencies' are of course greater in the older age groups. However, it is generally accepted that one of the most rapid ways of improving the educational level of the labour force is to design and operate imaginative programmes for persons currently in the labour force, especially those in the younger age groups, whose original education may now be inadequate, but who are still able to benefit from suitably designed courses.

(ii) Re-training arising from redundancy and change of occupation:

The level of employment in particular occupations occasionally decreases, for both economic and technological reasons. On social and economic grounds, courses designed with a view to helping at least some of the younger members in these redundant occupations to attain an acceptable proficiency in an alternative one may be considered desirable.

(iii) Refurbishing, broadening and updating:

Although most specialised workers achieve a higher level of proficiency in their profession as time goes by, due to a widening of their experience, it may equally be true that they forget a good deal of what they once learned. Again they frequently find that they need some additional subjects as a result of an expansion in their interests; this is particularly so in this era of interdisciplinary research.

Finally, it may happen that in their own subjects they are increasingly liable to obsolescence, due to the rapid growth of relevant new knowledge. For all of these reasons many highly qualified members of the labour force may require re-training at intervals. Part of this need may be met by occasional refresher and evening part-time courses, but it is already clear that in the more advanced countries it will be necessary to make more systematic provision to cope with the problem.

8.19 Thus the object and hence the scope of education and training for persons in the labour force may vary considerably as between different groups. Before any specific measures should be decided upon, several other questions would also need to be resolved. Chief of these other factors would appear to be (a) the question of a target date by which the 'deficits' should be remedied and (b) the extent to which courses should aim at remedying 'deficits' in relation to specific occupations or in equipping workers so that they may change occupations with relative ease.

8.20 The choice of a target date for achieving some sort of 'equilibrium' is bound up with the volume of resources which would be needed to provide the necessary courses. Thus if it were the intention to eliminate all 'deficits' at an early date, this would presumably require relatively large numbers of teachers and instructors, along with the appropriate buildings and equipment. Given that these resources could be made available and the programme undertaken successfully, then on its completion it would be necessary to transfer these teachers and other resources to some alternative use, since they would no longer be required in the educational sector. Hence a large scale programme would only be appropriate to an economy which possessed a high degree of flexibility in its pattern of output and resource use. This is seldom, if ever, the case where highly-skilled persons (such as teachers) are concerned, nor would it appear to be the case in Ireland. It would seem, therefore, that some time would elapse in diverting the necessary resources into and out of the educational sector, resulting in a position of scarcity being succeeded by a period of surplus. Of the three types of course identified above it would seem that the third ('updating') might present the least long-run problems in this respect, since there is likely to be a more or less continuous need for keeping persons abreast of new developments in various fields. Hence the problem here may be mainly one of building up the initial level of activity, which would then be sustained indefinitely. The other two categories may on the other hand involve more 'once for all" activities, in which case any plans should allow not only for the introduction and completion of the necessary programmes, but also for the subsequent use of the resources involved.

8.21 The second question is essentially a balancing of short-run and long-run considerations. To provide courses which make persons highly skilled in one specific occupation is desirable, so long as they remain in that occupation, to provide courses which make workers suitable for a variety of occupations may be desirable if one is thinking in terms of the whole working life of an individual. The latter result may usually be achieved by an adequate level of full-time education, whereas it is often considered to be the function of short-term and part-time courses to achieve the former objective. Insofar as the type of courses required falls into the second and third of the three categories identified above (i.e. redundancy and updating) then they may be taken as in the main referring to training for specific occupations. Courses for the first category—correcting deficiencies in basic education—may take either form, but might be supposed to be general rather than specific in character. It might be expected that eventually there would no longer be a need for such courses, as the general level of educational accomplishments rose.

8.22 It is not proposed to attempt here any more specific formulation of this question of imbalances between demand and supply of manpower. In particular it may be noted that no attempt has been made to break-down the category of high-level manpower. To do so would entail projecting the detailed destination of persons leaving the educational sector with various types of qualifications, together with changes in occupation by those already in the labour force. Thus to relate the demand and supply for, say, engineers, it would be necessary to know how many of the persons who graduate as engineers in a given period will in fact take up employment in that profession, how many persons will enter such employment from other sources and how many persons will leave employment as engineers not merely for normal retirement etc., but also to take up other positions (such as management). One problem with such projections is that because of the possibilities of substitution occurring, since any given position may be filled by persons with various qualifications (or to say the same thing differently, persons of given qualifications may take up various types of occupation) the margin of error rises as more specific categories are chosen. Hence, for projections to be reasonably accurate, the categories used must be fairly broad. On the other hand, to be really useful the definition of categories might need to be very narrow. Thus 'engineer' might be insufficient if one is interested in planning for additional teaching facilities; it might also be necessary to specify the type of engineer involved—electrical, civil, chemical and so forth. Given the data and resources available to us, it was felt that the degree of detail should be confined to the broad groupings of the tables in the earlier part of this chapter. However, while we have thus avoided any consideration of the position in relation to any particular skill or category of the labour force, we find it necessary to discuss even in a brief way, the question of the future demand and supply of technicians.

TECHNICIANS

8.23 As no national survey of the technician problem has yet been undertaken in Ireland, it is possible to discuss it only in aggregate terms. However, there seems to be fairly general agreement that the following groups of technicians can be identified: research and development, design, production planning, organisation and methods, production, testing, sales, site installation, administration and other miscellaneous groups.

8.24 There exists by now a not inconsiderable literature on technicians, particularly on the difficulties of estimating the present situation and projecting the future demand.[1] Much of the discussion has been taken up with the problems of identifying and classifying the fields of technician activity and the estimates of demand and requirements made to date reflect these problems. Although such estimates would seem to have a limited validity, they are useful as indicators of the magnitudes involved.

8.25 In our consideration of the demand side, we have drawn extensively on other work in this field, particularly the publications referred to in the footnote. On the supply side we have examined in some detail the present output of qualified persons from the educational sector. Such data does not appear hitherto to have been collected for Ireland.

THE DEMAND FOR TECHNICIANS

8.26 In *Training of Technicians in Ireland*, Table 9, lower and upper estimates of the present stock of technicians have been calculated, on the basis of a ratio of technicians and technologists of 2.6 in the transportable goods industries and 1.15 in building, public utilities etc. This places the number of technicians between 2,920 and 5,680.

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[1] The Irish situation is examined in *Training of Technicians in Ireland* (OECD, Paris 1964). See also *Technicians for Irish Industry* by G. L. Latchford, published by the Board of Studies of the City of Dublin Vocational Education Committee, *Technicians* by Professor J. C. Dooge, a paper prepared for Cumann na nInnealtóirí, (The Engineers' Association) in June, 1962 and *Meeting the Demand* by J. P. Hyland, and J. H. Harbison, a paper presented at the annual conference of Cumann na nInnealtóirí (The Engineers' Association) on 3rd October, 1964.

It is not clear from the context if these figures are intended to refer to all technicians : it seems doubtful if they were intended to cover medical and dental technicians. If they are, it might be suggested that they are on the low side, bearing in mind that in 1961 there were 7,900 scientific and technical personnel and over 20,000 medical personnel and pharmacists in the State.

8.27 In chapter 7, the total number of scientific and technical personnel, excluding medical personnel and pharmacists, is projected to more than double, to 16,000 in 1971 (Table 7.6). Assuming the ratio of technicians to technologists remains unchanged, this would result also in a doubling of the number of technicians required. If therefore, for the purposes of discussion, the mean of the OECD estimates of the 1961 stock position were taken (4,300), it can be assumed that by 1970 an additional 4,300 technicians would be required. If replacement demand is assumed on the same basis as for professional and technical personnel generally, i.e. about one-fifth of the 1961 stock, (Table 7.11), we get a total demand of 5,000 for the decade 1961-71.

8.28 If it is accepted, however, that the number of technicians in Ireland is inadequate, it becomes necessary to project an 'ideal' situation by 1971. One way of doing this is to examine the situation at present in other more industrially advanced countries and to project the requirement to enable the Irish position to approximate to the standard in these countries by 1971. This is an area where international comparisons are extremely difficult and call for an expert knowledge both of educational systems and professional qualifications.[2] For example, in several European countries there exist two grades of professional engineers, one with a university degree, the other with a professional qualification below university level. It might be said that the latter would correspond to technicians in this country, but in that case there is the additional difficulty that some countries have also a recognised technician grade e.g. Sweden, Belgium.[3]

8.29 It seems feasible, however, to accept some target figures for the relationship between technicians (including draughtsmen) and scientists, engineers and technologists, by using some data available from such sources as those referred to earlier and also available data for a number of other countries. Some of the most useful data of this type were the results of an establishment survey of manufacturing industry conducted by the U.K. Ministry of Labour in May, 1964 and published in *Statistics on Income, Prices, Employment and Production*, March, 1965. These data give some indication of the ratio of technicians to other scientific and engineering professionals for each industry or industry group. Similar data are also available for some other European countries.

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[2] See *Resources of Scientific and Technical Personnel in the OECD area*, Chapter 11, Part A, VII (OECD), Paris, 1964.

[3] The problem is to apply in practice agreed occupational definitions e.g., the EUSEC definition. In the public discussions, it would seem as if 'technician' is sometimes given an educational connotation. Thus engineering technicians are generally defined by reference to the non-university trained engineer found in many European countries.

8.30 While the element of arbitrariness in all such targets, as well as the difficulties of identifying in practice the precise boundaries of the word ' technician ', should not be ignored, it nevertheless appears worthwhile to attempt to define this target and thereby develop some arithmetical estimates of the future ' demand ' for technicians. These estimates would appear to be useful as a provisional basis for decisions in this field.

8.31 In principle, the demand we are concerned to define is the ' stock ' demand at a given future target date. Given present practices, it is evident that, taking any specific overall technician/technologist ratio, however conservative, such a target could not be met in the forecast period. Hence, there is likely to be a continuing deficit in the supply of technicians. To remedy this it might be necessary to train technicians in numbers in excess of the target ratio for a period of years in order to reduce the backlog. It would also appear to have some advantages if this incremental production of technicians were concentrated to the greatest possible extent on upgrading the qualifications of persons at present in the labour force, with partial or incomplete qualifications. While one would not suggest any rigid formula, it would avoid some of the problems if special incentives could be arranged to enable persons with partial qualifications currently engaged on technician type work to upgrade their qualifications.

8.32 In paragraph 8.27 an expansion demand of 8,000 in the number of scientific and technical personnel[4] has been indicated between 1961 and 1971 (excluding medical, veterinary, agriculture and teaching personnel). If replacement demand is estimated at a further 2,000, we get a total flow demand of about ten thousand over the ten year period or roughly one thousand per annum for all scientific and technical personnel (excluding medical, veterinary, agricultural and teaching personnel).

8.33 We may distribute this total flow in the ratio of 3 technicians to one technologist as a reasonable flow target to aim at in the next few years. This gives a total inflow requirement of 7,500 technicans for the decade to 1971. The position in regard to scientific and technical manpower then would be that there would be around 11,000 technicians (assuming there are about 4,300 at present, which seems to be rather doubtful) and 6,000 scientists and technologists, a ratio of 1.83 : 1 against a present estimate of 1.07 : 1. In this connection it is of interest to note that in the paper *Meeting the Demand*, Hyland and Harbison have forecast a requirement of a stock of 3,500 engineers in 1970 and they say that the figure presumes a basic population of not less than 9,500 technicians.

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[4] Occupation Codes (187, 188, 189, 194, 206), Table 3, page 15 of Volume III—Occupations, Census of Population 1961.

8.34 From the foregoing estimates it can be concluded that the required numbers moving into the labour force would need to be approximately 750 technicians (including draughtsmen) as compared with 250 scientists, engineers and technologists per annum. It is considerably more hazardous at the present stage of development of long-term manpower forecasting to attempt to allocate each of these figures to specific categories of either group. The figures may, however, when increased by some factor to take account both of expected "drop-outs" on the one hand and potential emigrants on the other, serve as a kind of approximate measuring rod of the number of persons who should begin courses of these types each year. Using a factor of about one-third to cover both of these contingencies it may be estimated that approximately 350 students should begin courses of university type in science and/or engineering while about 1,000 students should begin technician-type course. In addition to these numbers a number to correspond to future teaching needs should also begin university or teacher training courses in natural sciences, both physical and biological. This number is also dependent on the rate at which we may wish the backlog to be reduced as well as on the expected drop-out ratio and the potential number of emigrants. Taking these factors into account we may suggest a figure of about 150 as the minimum required number of entrants for this purpose. Combining these figures we get a total required entry figure of about 500 to university type courses in science, engineering, architecture etc. and about 1,000 to technician type courses.

8.35 The corresponding student stock figures can be derived by multiplying these entry figures by the number of years for each kind of course, adjusted for 'drop-outs' on the one hand, and for repeaters and transfers on the other. The minimum capacity required is a simple matter in the case of full-time pupils, being at least equal to the proposed stock of pupils (and preferably rather more, thus allowing for some expansion). It is, however, a more complex matter when considering part-time or sandwich students since the same capacity can be utilized by more than one such student in different circumstances.

8.36 With the foregoing data as a background, we can now proceed to consider the output of persons with technician-type qualifications.

TECHNICIAN-TYPE QUALIFICATIONS

8.37 Technician-type qualifications are generally obtained through attendance at appropriate courses in vocational schools. As we have pointed out in chapter 1, most of these courses are organized on a part-time basis. The examinations taken by students are mainly the Technical School Examinations (Technological) of the Department of Education and the examinations of the City and Guilds of London Institute. There are also more specialised examinations, of which the most important numerically seem to be the examinations of the Institute of Medical Laboratory Technologists.

8.38 The Technical School Examinations are single subject examinations in trade and theoretical subjects. For trade subjects there are associated practical and written examinations at two levels, junior and senior. The technological examinations (as the theoretical examinations are called) are provided at three levels, elementary, intermediate and advanced; a fourth level, called the higher technological, is provided in mechanical engineering and mathematics. A diploma course is provided in applied chemistry.

8.39 Examinations are provided in the following groups: mechanical engineering, motor-car engineering, electrical engineering, building, applied chemistry, flour-milling, radio service work and hairdressing. Examinations at elementary, intermediate and advanced stages are also held in commercial, domestic science and art subjects. A detailed list of the subjects in which examinations are provided will be found in Appendix VIII C.

8.40 While the theoretical examinations are described as technological examinations, they are generally considered to be of the technician type. We understand that the possibility of devising a more apt title is being considered.

8.41 The conditions for the award of certificates vary considerably. In trade subjects a success in both practical and written tests is normally required. For technological certificates, subjects are often linked and success in a set of subjects is required to obtain a certificate. In many cases therefore, it takes some years to qualify for a certificate.

8.42 Candidates for the examinations are, in the main, part-time students, including apprentices. They would have followed evening courses or various forms of day release, block release or sandwich courses.

8.43 The examination records are kept in the form of individual record cards. Each card contains the name and date of birth of the candidate, the subjects taken by him with years and results and a note of certificates issued: the subjects of a group are normally recorded on the one card. A candidate generally takes the examinations over a period of years and so some duplication of records may occur. It is possible also that there are some lacunae in the record of certificates awarded. Generally, however, these cards seemed to be suitable for analysis and they formed the basis for our work.

SUPPLY OF TECHNICIANS

8.44 In order to obtain some estimates of the annual output from the educational sector of persons with technician-type qualifications, we analysed the results of the Technical School Examinations from 1945 to 1963 inclusive. This analysis could be taken back to 1936, when the present scheme of examinations was established; the examinations prior to 1936 were on a somewhat different basis and comparable analyses may not now be possible.

8.45 Table 8.8 shows for each main examination group the total of individual certificants at each level. It shows that between 1945 and 1963 a total of 2,580 individuals[5] received one or more recognised technical qualification from the Department of Education. Of the total, those with intermediate and advanced stage qualifications might be regarded as technicians. We are not in a position to express a firm judgment on this; some of the advanced certificates might more properly be regarded as technological qualifications and some of the elementary qualifications might be accepted for lower technician positions.

8.46 Table 8.9 shows the average annual output in each five-year period by examination group. It will be seen that generally the output has been increasing significantly in recent years. It can be assumed that this trend will continue so that the total output of certificants for the decade to 1971 should pass 2,000. However, for the intermediate and advanced stages, on the basis of Table 8.9 the total would be possibly about 1,000.

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[5] Including Post Office employees.

TABLE 8.8

Technical School Examinations (Technological) 1945–63—Individual Certificants by Examination Group

Examination group	Stage					
	Elementary		Intermediate		Advanced	
	1945/59	1960/63	1945/59	1960/63	1945/59	1960/63
	Total number of individual certificants					
Building	50	57	74	45	43	36
Mechanical Engineering	227	144	90	38	35	33
Motor-car Engineering	178	120	94	69	25	42
Electrical Engineering	357	199	44	41	11	20
Applied Chemistry[1] ..	155	8	36	11	33	—
Flourmilling	—	—	17	4	21	3
Post Office (Communications)[2].	—	—	—	—	—	—
Food Technicians Diploma.	—	—	—	—	—	10
TOTAL ..	967	528	355	208	168	144
Mathematics[3]	444	550	43	123	30	46

[1] In 1955 the scheme of examinations in applied chemistry was reorganized on a new basis.

[2] These examinations are not divided into stages. The scheme has been extensively recast in recent years. From 1960 to 1963 the number of individual certificants was 210.

[3] There is some overlap between mathematics and other groups, e.g. applied chemistry, as it is sometimes required for the award of certificates in these groups.

NOTE: Detailed tables for each examination group will be found in Appendix VIII.C.

TABLE 8.9

Technical School Examinations (Technological), 1945–63—Average Annual Output of Individual Certificants by Group, 1945–59 and 1960–63

Examination Group	Stage					
	Elementary		Intermediate		Advanced	
	1945/59	1960/63	1945/59	1960/63	1945/59	1960/63
	Average Annual number of individual certificants					
Building	3	14	5	11	3	9
Mechanical Engineering	15	36	6	10	2	8
Motor-car Engineering	12	30	6	17	2	11
Electrical Engineering	24	50	3	10	1	5
Applied Chemistry ..	10	2	2	3	2	—
Flourmilling	—	—	1	1	1	1
Food Technicians Diploma.	—	—	—	—	—	3
TOTAL ..	64	132	24	52	11	37
Mathematics	30	138	3	31	2	12

Post Office (communications): Average 1960–63 = 53.
NOTE: Averages are given to the nearest whole number.

8.47 It must be emphasised that the term 'certificants' is not synonymous with 'certificates'. The word is used in reference to individuals, an individual being counted only in relation to the highest stage certificate obtained by him during the period covered by the tables. He may, indeed almost certainly will, have obtained more than one certificate, but he has been recorded only once—under the highest stage certificate obtained. Tables 8.8 and 8.9 therefore, are a record of the highest levels of attainment reached by individuals, not of the number of certificates issued by the Department. (It may be useful to add at this point, that equally, passes in the examinaneed not be synonymous with certificates issued).

8.48 The City and Guilds of London Institute provides a more comprehensive range of examinations in trade and technological subjects than the Department of Education. There is a great variety of stages, levels and certificates. We did not succeed in collecting any statistics on Irish entrants for these examinations. The number of subject entries from the Republic in 1963 was 2,089.[*] This is the aggregate number for all subjects and the number of individual candidates would be considerably less. The Department of Education keeps a record of the examination results of candidates in the Republic, but it is not in a convenient form for analysis. However, we made a cursory examination of the 1963 result sheets. This showed that the majority of the candidates are entered by the colleges of technology in Dublin. The largest groups of candidates are in communications, electrical engineering and power plant operation, printing, radio and electronic servicing, catering and the building and furniture trades. The number of candidates for other subjects, such as jute spinning, textiles and instrument maintenance is extremely small.

8.49 A check of approximately 400 candidates in communications revealed that there were only about 180 individuals. It is unlikely, therefore, that the number of individual candidates in 1963 exceeded 1,000. It is also unlikely that this total has fluctuated very much in recent years. The percentage of total passes in the Institute's examinations was 62 per cent, but it appears to have been somewhat lower in some of the groups mentioned in paragraph 8.48. Assuming that the Irish candidates perform no better than the general body of candidates, this means that the number of successful individual candidates is unlikely to have exceeded 600. If allowance is made for trade certificates the number of technological successes was probably about 400. The actual output from this group, that is, those who obtained their highest certificate in a given year, would of course, be a good deal smaller. Finally, there can be little doubt, particularly in view of the preponderance of candidates for examinations in communications and electrical engineering, that there is a considerable amount of duplication of entries between the Technical School Examinations and the City and Guilds Examinations.

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[*] Eighty-fourth Annual Report of the Institute, 1962/63—Part V (Examination Statistics, Home).

8.50 It would appear, therefore, that the annual net increment of qualified personnel from the City and Guilds Examinations is small. It may, nevertheless, be an extremely important increment in so far as it occurs in such areas as printing, not at present catered for to technician level in the Department's examinations.

8.51 Finally, there is the output of technicians from formal wholetime and part-time day courses in technical colleges and vocational schools. Unfortunately we are unable to say to what extent the output from these courses is already comprehended in the certificant output figures for the Technical School and City and Guilds Examinations. In general, it may be taken that the greater part of the output from the wholetime day courses has not been previously accounted for: in the case of the part-time students about two-thirds of the output would have been accounted for in the Technical School and City and Guilds figures.

8.52 Table 8.10 shows the numbers enrolled in wholetime courses, together with an indication of the duration of the various courses.[7] The table shows that in 1962/63 there were 835 students enrolled in such courses; it may be noted as a matter of interest that new entrants to the same courses in 1963/64 numbered 352 (for details see Tables 6.22 and 6.23). The list may not be comprehensive, but it appears to be a reasonably complete indication of the wholetime training courses available for technician trainees. Some of the courses listed may be felt to be more properly sources of technological than technician personnel; they are all shown here as potential sources of technicians.

8.53 We did not succeed in collecting very much data on outputs of certificants.[8] An effort to obtain information on those who leave without completing the course was not successful.

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[7] Persons following commercial and catering courses have been excluded, as not appropriate to the discussion.

[8] Some data are given in Appendix VI. Table 22.

8.54 Our information on part-time courses, both day and evening, is limited to stock figures for the years 1962/63 and 1963/64. (Table 8.11). This table is reasonably comprehensive, but some courses may have been omitted. A difficulty about assessing the technician content of part-time courses is that a number of courses, especially single subject evening courses, not specifically designed for technician trainees (or at least not so described), may be availed of by students studying for various external examinations that would qualify them as technicians. Some of the courses on our list might be more properly regarded as courses for apprentices and others may be designed to produce technological personnel; again, they have been included as potential sources of technicians.

8.55 Examinations taken by the wholetime students are generally, as indicated in paragraph 8.51, of a specialist nature, either special internal college examinations or examinations of professional institutes. A considerable number of the part-time students take the

TABLE 8.10

Wholetime Day Technical Courses—Enrolments 1962/63

Course	Enrolment	Duration of Course (years)
Opticians	11	3
Architectural Technology	20	2
Automobile Technology	21	3
Building Technology	7	3
Preliminary Engineering	75	2
Aircraft Technicians	24	4
Aircraft Electrical Technicians	14	4
Engineering Draughtsmen	19	1
Marine Engineering	41	3
Senior Science	36	1
Electrical Engineering	39	4
Science (Intermediate B.Sc. course)	12	1
Health Inspectors	10	3
Architecture	79	4
General Surveying	36	4
Quantity Surveying	54	4
Diploma in Engineering	41	4
Telecommunication Technician	116	3
Radio Officer Certificate[1]	180	2
TOTAL	835	

[1] Includes students in the 2 non-aided Radio Schools.

Source: Annual statistical returns to the Department.

TABLE 8.11

Part-time Technical Courses—Estimated Numbers of Students Attending Day and/or Evening Courses, 1962/63 *and* 1963/64

Course	Number of students in attendance	
	1962/63	1963/64
Architecture	100	120
*Building Technology	89	78
*Engineering	250	270
Aero-engineering	60	63
*Automobile Engineering	82	80
Engineering draughtsmanship	22	30
*Senior Science	80	88
B.Sc. (Intermediate)	28	16
B.Sc.—Part I	16	19
B.Sc.—Part II	4	4
Medical Laboratory Technician	114	159
*Post Office Engineering	221	196
*Food Technology	25	9
*Instrument Technicians	14	10
*Agric. Engineering Technicians	13	10
Food Hygiene	110	18
*Printing Technology	30	30
*Paper Technology	12	12
Quantity Surveying	30	38
*Welding Technicians	6	30
Chemical Technology	—	7
*Laboratory Technicians	43	44
Air Navigation	12	—
*Flourmilling Technicians	24	13
Microbiology	9	23
*Industrial Electronics	24	12
*Dental Mechanics	—	28
*Electrical Technicians	15	20
TOTAL	1,433	1,427

*Students may take the Technical School Examinations and/or City and Guilds Examinations, on their own or in addition to other specialized examinations.

TABLE 8.12

Technical School Examinations: Percentage of Individuals Holding Technological Certificates who also held Trade Certificates, in Certain Groups, 1945/59 *and* 1960/63

Group	Highest level technological certificate held			
	Elementary		Intermediate	
	1945/59	1960/63	1945/59	1960/63
	Percentage who also held trade certificates			
Building	50	53	66	91
Mechanical Engineering	47	69	58	74
Motorcar Engineering	83	93	96	97
Electrical Engineering	45	75	64	73

examinations of the Department or the City and Guilds also, particularly the latter. Allowing for failures and attrition, both of which are probably fairly high, the annual net output (excluding medical laboratory technologists) not already counted is probably of the order of 250-300, of whom about a quarter might be regarded as technological manpower.

8.56 Taking into account all qualifications, Technical School Examinations, City and Guilds and the smaller specialist groups, it is unlikely that the total annual output of technician certificants is more than 400 annually. A small proportion of the elementary Technical School Examination certificants might perhaps, be added to cover some lower technician posts.

8.57 Our discussion has treated only of persons with full qualifications. The picture would be improved if persons with part qualifications could be included. There must be a considerable number of these. For instance in the Technical School Examinations virtually all the certificates require success in groups of subjects. For various reasons many do not complete the groups. Some fail the examinations, others find they need only certain subjects for their employment and they are content to qualify only in these. It is impossible for the non-specialist outside observer to say to what extent such part qualifications are useful. If a view might be hazarded, it would be that while useful in the short term, in the long-term such technicians may experience difficulty in absorbing new knowledge and adapting to new techniques, to the detriment of efficiency and productivity. It is, however, a situation that is likely to continue so long as there is a failure to delimit and define technician functions and develop formal training courses and recognised qualifications.

8.58 Table 8.12 shows the percentage of Technical School Examination certificants who also held junior or senior trade certificates. This table might support a view that many of these certificants are not in fact employed as technicians. On the other hand, in the case of the whole-time day technical courses, the majority of entrants held the secondary school intermediate or leaving certificates.

8.59 It seems clear that even the most optimistic forecast of output for the decade will fall short of the minimum estimated inflow of 5,000. If the higher estimate (on the ratio of 3 to 1) is taken, by 1970 the deficiency will have assumed formidable proportions.

8.60 It is difficult to see what measures can be taken to avert this situation, particularly as the facilities of the proposed regional technical colleges will not become available until late in the decade. One possibility might be that mentioned in paragraph 8.31, to select suitable persons from the skilled trades and from apprentices and qualify them as technicians on part-time courses. It would of course, be necessary for industry to provide the appropriate incentives. Measures of this type might at least keep the situation within bounds, as there is a danger that the 'backlog' demand may become so big as to persist through the seventies.

8.61 Finally, a word on the coverage of technician courses. A glance at the tables shows the variety of courses being provided, some for quite small groups. There is a possibility that in the anxiety to resolve the shortages in the major areas, e.g., engineering technicians, the smaller groups may, if not overlooked, at least not be given their due share of attention. One reason for this would derive from the problem of organization. Suitable courses for such groups can be provided only in one or two central locations. If they are to cater for trainees from all areas a concerted effort of organization will be required from employers and educational authorities.

8.62 It is also of interest to note the industries not represented in the tables. Two examples will suffice, textiles and footwear. Both are fairly widely distributed over the country, provide considerable employment and are major exporters. Both must contend with serious competition, especially in export markets. In both industries also there have been major technological and scientific advances in recent years and more may be expected. In regard to technician training they present an interesting contrast. The City and Guilds provide suitable courses for both. The footwear industry in Dundalk, but not in other centres so far as we are aware, has endeavoured to avail itself of these and courses are provided by the vocational education committee. In recent years, we understand, some students have reached the full technological level. In the case of textiles a perusal of the 1963 examination results for the City and Guilds showed only two candidates.

8.63 These remarks are not intended as criticisms of the two industries mentioned; they have been cited only to illustrate the fact that there appear to be important areas for which educational provision is not being made at present. The Committee on Industrial Organization has commented in its reports on the dearth of educational courses at operative and higher levels in virtually all the industries it has surveyed. It is indeed one of the matters it has commended to Adaptation Councils for their consideration. No doubt as these Councils begin to have effect the situation will show a gradual improvement.

8.64 Given the limited data available much of this discussion must be regarded as rather tentative. Of the reality of the shortage of technicians there can be little doubt. Equally, there seems to be little doubt that it will not be resolved by 1970. In order to provide the data on which appropriate measures might be based the first need is to determine, by sector, the present stock of technicians and future requirements. Experience shows that in present circumstances this is a formidable, indeed frustrating task, and it would seem to be a matter for whatever body is entrusted with general manpower forecasting.

8.65 It will be noted that in Tables 8.8 and 8.9 and in the tables in Appendix VIII.C, persons currently pursuing their studies are included. It is not possible at this stage to say how many such persons are included. In addition many of the persons with advanced level qualifications may be teachers and thus not making a direct short-term contribution to economic progress. We have not data to enable us to say how many such persons there may be. These two problems, and the general difficulty, experienced in the preparation of this sector, of expressing examination results in terms of unduplicated individual qualifications, where several examination avenues are available, would suggest that the development of an individualized system of data collection and processing for technical education deserves high priority in any scheme of statistical reform.

CONCLUSION

8.66 The discussion in this chapter suggests that there may be a need on manpower grounds for providing more education and training, not only to persons in the educational sector, but also to those who are already in the labour force. Any precise formulation of the necessary increases would require more data than are currently available, but the broad scope of the action required can be described. Some of the questions which need to be resolved before any specific policy is adopted have also been suggested. In chapter 12 it will be assumed that these manpower requirements do in fact provide a reasonable basis for action; they will be there considered in relation to other aspects of the educational system.

PART III

In Chapters 9 and 10 of Part III an examination is made of the efficiency of the educational system with particular reference to the manner in which resources are being used in it. Chapter 11 considers the structure of educational financing.

We confine ourselves to the first and second levels as the Commission on Higher Education is enquiring into third level education.

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CHAPTER NINE

The Use of Resources in National Schools

9.1 In this chapter an examination is made of the manner in which the available resources are distributed throughout the national school division (the State supported primary sector), together with some attempt at assessing the efficiency of this distribution. An economic study of this nature would preferably be conducted in cost/benefit terms ; that is the costs and benefits which arise both for the people directly concerned and for the community as a whole would be identified and then measured, if possible in monetary terms. The theoretical problems of such an approach in the educational field coupled with the paucity of relevant Irish data compel us to place the major emphasis on the cost aspect of the problem. Some possible indicators, albeit inadequate, will however be offered of the benefits, which may result from educational expenditure.

COST ASPECTS

9.2 The consideration of national school costs has been framed mainly in terms of the provision of teaching services, since teachers account for over five-sixths of current expenditure—£10.5 million out of £12.4 million in 1962/63. In 1962/63 there were, in round figures, 4,800 schools in operation (exclusive of special schools) with 14,000 teachers and 483,000 pupils. The distribution of these totals by size of school is given in Tables 9.2 and 9.3, while the percentage distribution is given in Table 9.4.

THE DISTRIBUTION OF TEACHERS

9.3 The number of teachers whom the Department will sanction in a given school, and hence the pupil/teacher ratio in the school, is determined by the number of pupils. Details of the existing[1] regulations are given in Appendix IX.A. Table 9.1 shows the possible range of pupil numbers for a given number of teachers and the possible range of the resulting pupil/teacher ratio: the overlapping of the pupil numbers is due to differences in the rules, depending on whether the pupil numbers in the school are falling or rising. For example a school is not allowed a third teacher until it reaches 90 pupils, but once having reached that level it may retain three teachers until the number of pupils falls below 80. Thus one school with 85 pupils is allowed three teachers while another school with 85 pupils is allowed only two teachers. The figures in this table relate to what are called 'classification schools' which account for the bulk of the total: the rules for 'capitation' schools are slightly different but the basic features are the same.

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[1] The details of the regulations have since been changed.

TABLE 9.1

National Schools: Possible Range of Pupil Numbers and Pupil/Teacher Ratios for Given Number of Teachers

(According to regulations in force in June, 1964[1]*)*

Number of Teachers	Possible range of Pupil Numbers	Possible range of Pupil/Teacher Ratio
1	7—35	7—35
2	28—89	14—44
3	80—139	27—46
4	125—209	31—52
5	190—264	38—53
6	245—319	41—53
7	300—399	43—48
8	320—384	40—48

[1] The details of the regulations have since been changed.

9.4 Given the possible pupil/teacher ratios in Table 9.1 it will not be surprising to find that large classes are the rule in the larger schools—this is discussed later (paragraph 9.14). It will also be seen from Table 9.1 that the pupil/teacher ratios in the small schools could vary considerably and could be much smaller than the ratios in the large schools. We now look at the position in practice, as shown by Table 9.2.

TABLE 9.2

National Schools: Pupils and Teachers by Size of School, (Number of Teachers Employed), 1962/63[1]

(Including Secondary Tops, excluding Special Schools)

Size of School (Number of Teachers Employed)	Number of Schools	Number of Teachers[2]	Number of Pupils[3]	Pupil/Teacher Ratio
1 Teacher	736	736	13,185	17·9
2 teachers	2,458	4,916	129,080	26·3
3 teachers	878	2,634	87,343	33·2
4-6 teachers	405	1,875	75,744	40·4
7 teachers and over ..	344	3,918	177,268	45·2
TOTAL ..	4,821	14,079	482,620	34·3

[1] These figures differ slightly from those in the Annual Report 1962/63.
[2] Excluding supernumeraries (404) in capitation schools.
[3] Average number on rolls.

Source: Annual returns (form AR. 1) submitted by schools to the Department.

It will be seen that there is in fact a very wide spread in the pupil/teacher ratio. While the overall average is 34, the average for the one-teacher schools is less than 18 and the average for the largest schools is greater than 45. Allowing for supernumerary teachers (404 in 1962/63), all of whom were in schools of more than two teachers, would reduce the disparity only slightly.

9.5 It is also of interest to examine these differences by the actual enrolments of the schools, as in Table 9.3.

TABLE 9.3

National Schools, Pupils and Teachers by Size of School (Number of Pupils), 1962/63[1]

(Including Secondary Tops, Excluding Special Schools)

Size of School (Number of Pupils)	Number of Schools	Number of Teachers[2]	Number of Pupils[3]	Pupil/Teacher Ratio	Average Size of School (Number of Pupils)
0—24	620	635	9,795	15·4	15·8
25—49	1,222	2,315	46,068	19·9	37·7
50—99	1,829	4,152	127,497	30·7	69·7
100—199	649	2,211	83,721	37·9	129·0
200—499	356	2,588	115,673	44·7	324·9
500 and over	145	2,178	99,866	45·9	688·7
TOTAL ..	4,821	14,079	482,620	34·3	100·1

Source: Annual returns (form AR. 1) submitted by schools to the Department.

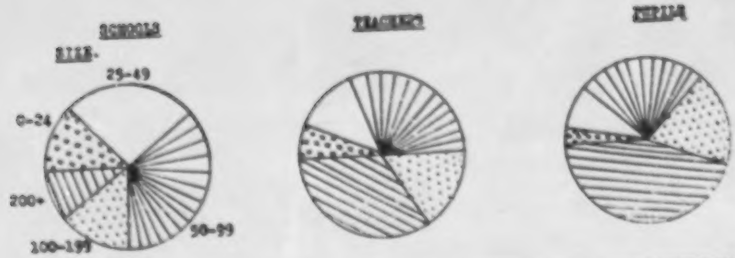
[1] These figures differ slightly from those in the Annual Report 1962/63.
[2] Excluding supernumeraries (404) in capitation schools.
[3] Average number on rolls.

The wide variation in the pupil/teacher ratio is equally clear from this aspect : while the average ratio for schools of less than 24 pupils is only 15, the average ratio for schools of 200 pupils and over is over 45. (See Chart 9.2—' E Size ' means the number of pupils on rolls). It may be noted that there has been little change in the overall pupil/teacher ratio in recent decades—from 37 in 1932/33 to 34 in 1962/63 (Graph 9.1). The corresponding ratios for other O.E.C.D. countries are given in Appendix I.A, Table 6.

9.6 The basic data of Table 9.3 are given in percentage form in Table 9.4. This shows that the schools of less than 50 pupils have 21 per cent of all the teachers whereas they have only 11.5 per cent of all the pupils. On the other hand the schools of over 200 pupils have 45 per cent of the pupils but only 34 per cent of the teachers. (See also Chart 9.1).

CHART 9.1

SCHOOLS, TEACHERS AND PUPILS BY SIZE



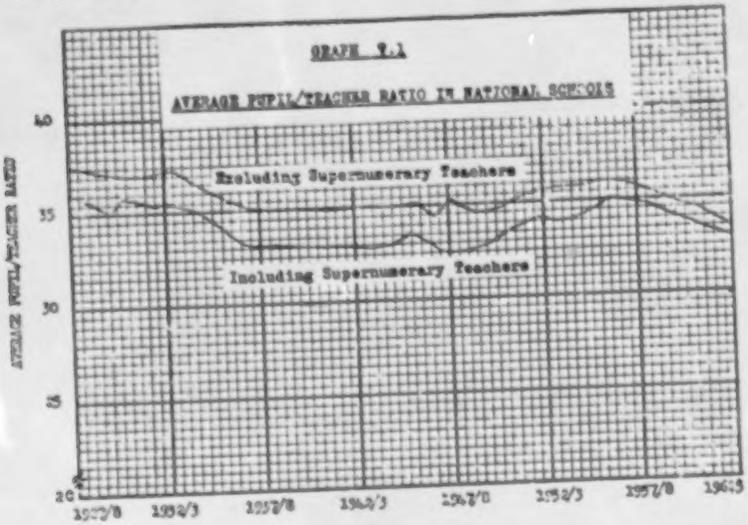


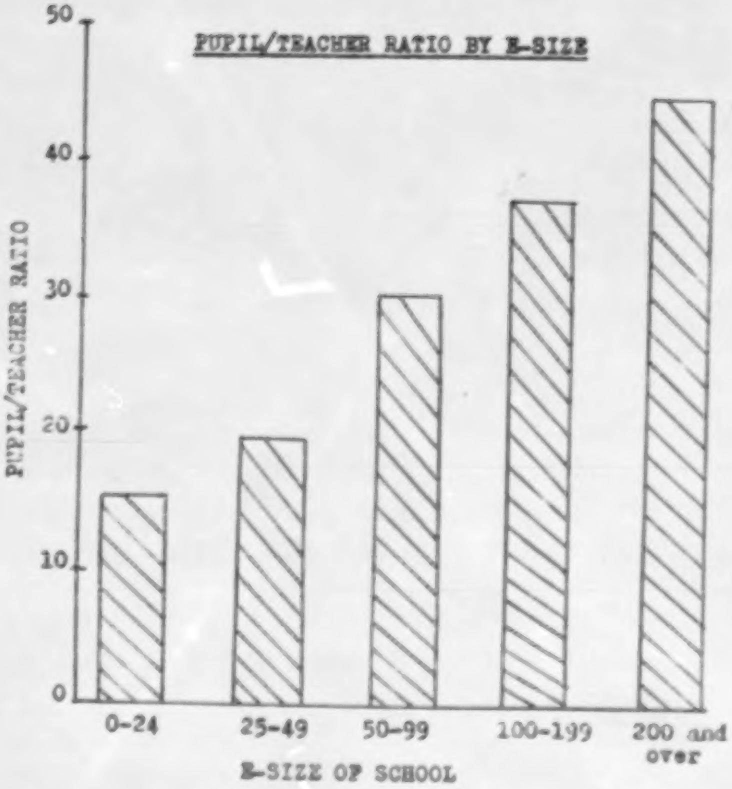
TABLE 9.4

Percentage Distribution of National Schools, Pupils and Teachers by Size of School (Number of Pupils), 1962/63

(Including Secondary Tops, Excluding Special Schools)

Size of School (Number of Pupils)	Schools	Teachers	Pupils
	Percentage Distribution		
0—24	12·9	4·5	2·0
25—49	25·3	16·4	9·5
50—99	37·9	29·5	26·4
100—199	13·5	15·7	17·4
200 and Over	10·4	33·9	44·7
TOTAL ..	100·0	100·0	100·0

CHART 9.2



THE DISTRIBUTION OF SCHOOLS

9.7 We have thus seen that small schools are relatively heavy users of teachers. We now consider what factors are associated with the existence of small schools.

9.8 Table 9.5 and Chart 9.3[3] give the national schools by size by centrality (location) and by religion. They show clearly the connec-

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[3] 'E-size' means the the number of pupils on rolls.

TABLE 9.5

Distribution of National Schools by Size (Number of Pupils) by Centrality, by Religion, with Total Pupils and Teachers by Centrality

(a) Catholic Schools

Centrality (Location)	Size of School (Number of Pupils)						Total Number of Pupils	Total Number of Teachers
	0–24	25–49	50–99	100–199	200 and over	Total		
	Number of Schools							
Cities[1]	1	8	29	57	290	385	135,943	3,096
Towns (1,500 and over)	—	10	34	69	198	311	98,184	2,117
Towns and Villages[2] (200–1,500)	5	68	440	301	20	834	84,581	2,416
Rural Areas[2] ...	324	1,023	1,280	213	4	2,846	157,096	5,848
TOTAL ...	330	1,110	1,783	640	512	4,375	475,804	13,477

(b) Protestant Schools

Centrality (Location)	Size of School (Number of Pupils)					Total Number of Pupils	Total Number of Teachers
	0–24	25–49	50–99	100 and over	Total		
	Number of Schools						
Cities[1]	7	19	18	10	54	3,523	120
Towns (1,500 and over) ...	43	25	10	—	78	2,239	118
Towns and Villages[2] (200–1,500)	99	31	4	—	134	2,738	158
Rural Areas[2]	143	37	2	—	182	3,310	206
TOTAL	292	112	34	10	448	11,810	602

[1] The four county boroughs (Dublin, Cork, Limerick, Waterford) and Dun Laoghaire.

[2] The term 'rural areas' as used in chapter 2 comprises both of these categories.

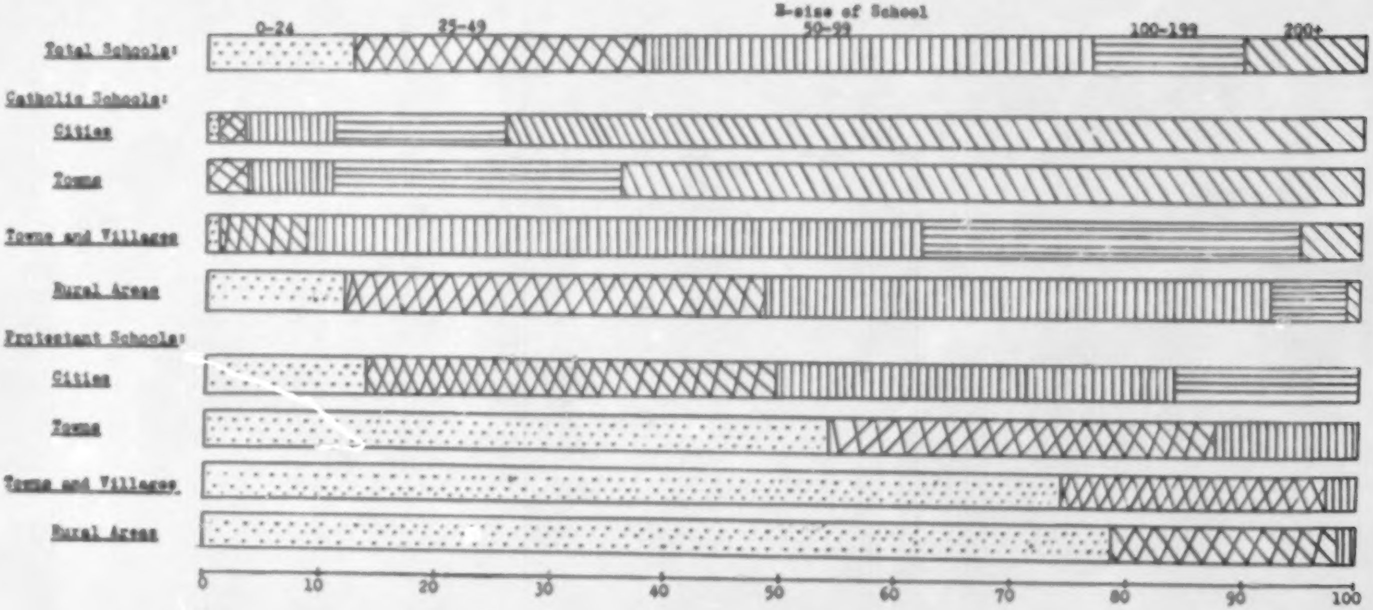
Source: Annual statistical returns to the Department.

tion between those two factors and the size of schools. Treating first of the location of the Catholic schools, we see that schools of less than 100 pupils (1 to 3 teachers approximately) constitute over 90 per cent of the schools in rural areas and 60 per cent of schools in small towns or villages, but only 11 per cent of schools in the large towns or cities. Of those small schools over 75 per cent are in rural areas, and over 95 per cent are either in rural areas or small towns or villages, that is, in 'rural areas' as defined in chapter 2.

9.9 The size of schools in an area will clearly depend on the density of population and its mobility. Since schools have a rather long effective life, the location of the schools may have been decided upon at a time when the population of an area was appreciably higher

CHART 9.1

THE PERCENTAGE DISTRIBUTION BY E-SIZE WITHIN EACH CENTRALITY AND RELIGION



than it is now, given the pattern of population decline and population movement in Ireland. The density of population in Ireland is now quite low. The population in rural areas (Chapter 2) at the 1961 Census represented just 9 persons, including 2.7 aged 0-14, per 100 acres. Finally, the lack of transport facilities meant a very limited mobility on the part of school children, resulting in schools generally being provided within 'walking distance' of the children's homes (3 miles apart).

9.10. Table 9.5 also shows that while Protestant schools account for 9 per cent of all national schools—Protestants form 5 per cent of the population—they account for almost 50 per cent of schools with less than 25 pupils, but for less than 1 per cent of schools with 100 pupils or more. It is understood that in the great majority of cases the pupils of a national school are either all Catholics or all Protestants—the regulations make provision for the recognition of very small schools where necessary to cater for different religious needs. Protestant schools have an average pupil/teacher ratio of 20 as against 35 for Catholic schools.[3] (Derived from Table 9.5).

9.11 Another factor which may contribute to smallness of schools is separation of boys' and girls' schools. In a number of cases there is a boys' school and a girls' school in the same building or in close proximity which are treated as separate and distinct schools. In 1962/63 there were some 400 small schools in that category in rural areas.[4] (They are not treated as separate schools if the number of pupils in either falls below 40[5]). Furthermore where a boys' school is conducted by a religious order of brothers it cannot be combined with a girls' school. Where there is a mixed school at present it may be replaced by separate boys' and girls' schools if the number of pupils in each is likely to be at least 60[6].

9.12 Another factor which might conduce to smallness in national schools is the presence of non-aided schools. These are mostly in Dublin and, therefore, the effect is not so marked, but their presence may be a cause of the surprising smallness of the national schools in some districts in Dublin. A further factor might be the recognition of schools for special purposes, such as all-Irish schools, but so far this is not known to have had any appreciable effect on the size of other national schools.

9.13 The combination then of such main factors as density and mobility of population and separation by religion and sex, determines the number of schools which are made available to cater for any given number of pupils. At the one extreme, it may result in one school catering for say 1,000 pupils, at the other fifty or more schools might be needed for the same number. In this sense then the distribution of teachers may be said to be more the result of external factors than of conscious official policy—this latter arising only at the stage of framing the operative limits for teacher appointments.

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[3] The pupil/teacher ratio by centrality and religion is given in Appendix IX. A, Table 2.

[4] Including small towns and villages.

[5], [6] Rules for National Schools (S.O.).

9.14 The wide disparity in pupil/teacher ratios as between large and small schools suggests a corresponding disparity in class size. The size of classes in a school will also depend, of course, on the distribution of the pupils by standard and on the number of teachers who are employed as non-teaching principals in large schools. Table 9.6 shows the position as of 1 February, 1963.[7] It will be seen, as expected, that large classes are closely associated with large schools: over 40 per cent of all classes in the largest schools had 50 pupils or more. Indeed less than 25 per cent of the classes in the large schools were under the maximum of 40 pupils proposed by the Council of Education. In terms of pupils, 84 per cent of the pupils in the large schools were in classes of 40 pupils or over as against 56 per cent in the 4-6 teacher schools and 16 per cent in the 1-3 teacher schools.[8]

TABLE 9.6

National Schools—Percentage Distribution of Classes by Size and by Size of School (Number of Teachers Employed) on 1st February, 1963

(Excluding Secondary Tops[1] and Special Schools)

Size of School (Number of Teachers Employed)	Size of Class					
	Less than 20 Pupils	20–39 Pupils	40–49 Pupils	50–59 Pupils	60 pupils and over	Total
	Percentage Distribution of Classes					
1—3 teachers ..	24·1	66·9	7·6	1·2	0·2	100
4—6 teachers ..	6·8	49·8	28·3	11·2	3·9	100
7 teachers and over	1·5	22·7	34·2	32·5	9·1	100
TOTAL ..	15·9	53·0	17·4	10·7	3·0	100

[1] See Annexe D. *Source:* February census 1963.

9.15 We would expect (from paragraph 9.8) to find that these large classes were mainly in the cities and large towns. This is borne out by table 9.7 which shows that over four-fifths of city pupils are in classes of 40 and over as against one-sixth of the pupils in rural areas. Since the Department has recently taken steps to improve the situation, the measures being directed at classes of 50 and over in Dublin, classes of that size are also shown in Table 9.7. It will be seen that more than half of the city pupils are in classes of 50 and over. If the schools are classified by size (number of teachers employed) as in Appendix IX.A. Table 11, the same picture emerges, over half of the pupils in the large schools (7 teachers or more) being in classes of 50 and over.

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[7] The data for Catholic and Protestant schools separately are given in Appendix IX A, Tables 9 and 10.

[8] Details in Appendix IX, A, Table 11.

TABLE 9.7

National Schools: Percentage of Large Classes and Percentage of Pupils in those Classes, 1962/63, by Centrality

	Classes of 40 and over		Classes of 50 and over	
Centrality (Location)	As Percentage of All Classes	Pupils as Percentage of all pupils	As Percentage of All Classes	Pupils as Percentage of all pupils
	Percentage			
Cities	75·3	82·4	43·4	52·0
Towns (1,500 and over)	54·4	69·1	22·0	32·5
Rural Areas[1]	10·6	17·9	1·8	3·8
TOTAL ..	31·1	46·5	13·7	23·3

[1] Including towns and villages of less than 1,500 inhabitants.

9.16 The Department's efforts should lead to a reduction in the number of such large classes in coming years but as we have already noted (chapter 4) the number of teachers required to achieve the Council of Education targets is unlikely to become available given the existing organization and present strategies. Table 9.8 has been constructed on the basis of present trends to indicate what the position is likely to be in 1970/71.

TABLE 9.8

National Schools—Projected Numbers of Schools, Pupils and Teachers by Size fo School, 1970/71

(Including Secondary Tops, Excluding Special Schools)

Size of School	Number of Schools	Number of Pupils	Number of Teachers	Average Pupil/Teacher Ratio
1 Teacher	600	10,300	600	17
2 Teachers	2,230	113,500	4,460	25
3 Teachers	1,070	105,000	3,210	33
4–6 Teachers	450	82,800	2,250	37
7 teachers and over ..	450	177,400	4,450	40
TOTAL ..	4,800	489,000	14,800	33

9.17 It will be seen that some reduction in the spread of pupil/teacher ratios for different school sizes may be expected together with a slight fall in the overall pupil/teacher ratio from 34 to 33. At the same time it would seem that a substantial proportion of pupils would continue to be in classes of more than 40.

CURRENT COSTS

9.18 The conclusion which emerges from the preceding examination is that teachers are distributed between schools on the basis of (1) a series of departmental regulations governing their appointment and (2) a series of factors governing the number of pupils in different schools. It has also been noted (in chapter 4) that given the present pattern of teacher distribution produced by these two determinants there are not sufficient teachers to meet the Council of Education target regarding the maximum size of class.

9.19 One consequence of this teacher distribution is that it produces significant differences in the costs of providing national school education for pupils in different types of school. Table 9.9 which is based on a 12 per cent sample of all national schools[9] illustrates the manner in which teacher cost per pupil varies with the size and centrality of schools. In particular it demonstrates that the smaller the size of school the greater the costs per pupil. To allow for the services of supernumerary teachers in large schools would reduce the disparity only slightly.[10] This table relates to the year 1961/62 as later financial data were not available at the time.

TABLE 9.9

Teaching Cost Per Pupil in a Sample of 595 National Schools, by Teacher-size and Centrality of School, 1961/62.

Centrality	School Size (Number of Teachers)						Average Salary[1] per Teacher
	1	2	3	4–6	7 and over	All Schools	
	Teaching Cost per Pupil (£)						£
Cities	21	31	22	19	12	13	669
Large Towns (1,500 and over)	51	27	20	16	14	15	659
Small Towns ..	49	26	21	16	—	20	720
Villages	39	21	22	21	—	22	709
Rural	34	27	23	20	—	26	688
TOTAL ..	37	26	22	18	12	17	679
Average Salary[1] per Teacher (£)	631	708	733	719	632	679	

[1] In Capitation schools the total grant divided by the number of teachers, excluding supernumeraries.

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[9], [10] See Appendix V.B. for details.

9.20 These differences, of course, follow logically from the fact that small schools have a much lower ratio of pupils to teachers. A teacher's salary is in the main independent of the size of school in which he or she works. The salary depends mainly on whether the teacher is married or single, trained or untrained, young or old, and whether he has special qualifications. With a given stock of teachers the total costs in salary would be largely independent of how the schools were organized. The only part of the salary which is directly linked to the size of the school is the allowance for principals and vice-principals. These amount to about £100 per annum for schools of less than 100 pupils, the amount per pupil falling with increasing number of pupils.[11] Of course the more schools there are the more principals there are. It is to be noted, however, that the regulations provide that where two schools are amalgamated the two principals concerned continue to receive their allowances.

9.21 Table 9.10, which is based on data for all schools, relates to other (non-teaching) expenditure items such as heating, cleaning and school materials.[12] These costs are borne partly by the managers and partly by the State. The most important is heating, which accounts for more than half of the total for each category of school. It will be observed that again it is the smaller schools which are the more expensive, but the extra amount involved in the one teacher schools is only about £1.10s. per pupil or about £20,000 annually. No allowance has been made for imputed labour costs in the schools run by religious, which comprise most of the large schools. The cost per pupil of heating and cleaning a school reflects, among other things, the extent to which the capacity of the school is being utilized. The differences in cost per teacher and hence perhaps in costs per classroom, are much smaller and represent only about £7,000 more annually in the smallest schools, as compared with the larger schools. Since size of schools is closely associated with location, differences in prices may also be involved. The slight rise in unit costs for the largest schools may be due to their greater provision of these services and also to their higher cost in city areas, but the difference is not great enough to pursue here.

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[11] In 1965 the principal's allowance ranged from £95 for schools under 50 to £430 for schools with between 500 and 600 pupils, with an additional £60 for each additional 100 pupils (Rules for National Schools).

[12] Excluding costs borne entirely by managers, see Appendix V.B.

TABLE 9.10

National Schools: Non-Teaching Current Costs by Teacher—Size of School, 1961/62. *(All Schools.)*

School Size (Number of Teachers)	Total Cost	Average Cost per School	Average Cost per Teacher	Average Cost per Pupil
		£		
1 Teacher	28,000	37·4	37·4	2·38
2 Teachers	130,000	52·6	26·3	0·97
3 Teachers	71,000	78·8	26·3	0·79
4-6 Teachers	45,000	114·4	24·8	0·60
7 Teachers and over	119,000	346·9	30·8	0·67
TOTAL	393,000	80·9	27·9	0·72

CAPITAL COSTS

9.22 It may be of interest to examine the situation regarding the capital costs of schools to see if any alteration in the pattern occurs. Information was collected regarding all of the 586 schools completed during the five year period 1958/62 inclusive. Detailed information was obtainable for these schools and this was used in preparing the following table:

TABLE 9.11

Cost per Pupil Place of New Schools Built During the Period 1958/62

Size of School (Number of Classrooms)	Recognised Costs			Total Costs		
	State Contribution	Local Contribution	Total	State Contribution	Local Contribution	Total
	Cost per Pupil Place (£)					
1 Classroom	109	16	125	120	20	140
2 Classrooms	81	11	92	89	14	103
3 „	68	9	77	75	11	86
4 to 6 „	74	10	84	82	12	94
7 Classrooms and over ..	94	14	108	104	18	122
All Schools ..	85	12	97	94	15	109

9.23 The presence of separate columns for recognized costs as distinct from total costs is due to the fact that not all of the expenditure relating to school construction is taken into account when preparing annual data on expenditure, or when apportioning the total as between state and local contributions. The normal data exclude items such as design and administrative charges in the case of the State, and land and legal charges in the case of the managers—hence the presence of the two sets of figures in the table.

9.24 It will be seen that in terms of cost per pupil place the smallest schools are again the costliest. It will also be noticed that the cost per place rises rather sharply for schools of 7 classrooms and over. This may be due partly to the fact that such schools are designed individually by architects selected by the school managers, whereas the smaller schools are all based on designs prepared by architects of the Office of Public Works. The larger schools also tend to devote more space to vestibules, corridors, assembly halls and so forth. It may also be noted that since smaller schools tend to have the greatest amount of spare capacity,[13] they would have much higher unit cost if the above data were to relate to the number of pupil places actually utilized rather than to the number of places made available.

9.25 The result of this brief examination of the cost aspects of national schools is to suggest that it is the smallest schools which are the most expensive to erect and to operate. This of itself is not adequate to enable any judgement to be formed as to their efficiency. It might well be that higher pupil costs are associated with greater benefits to the pupils concerned. Accordingly, it is necessary to turn next to an examination of this aspect of the question.

ANALYSIS OF BENEFITS

9.26 The benefits derived from expenditure on a school system should presumably relate to the beneficial effects which the courses have on the educational development of the pupils concerned: no reliable indicators of these quality aspects, however, have as yet been developed. It is, therefore, not possible to quantify the 'benefits' of education in any precise sense; it may nevertheless be possible to develop some useful indicators bearing on this topic.

EXAMINATION PERFORMANCE

9.27 In practice, the attainment level of pupils is the most frequently used indicator of benefits. A typical indicator of attainment is the examination performance of pupils. The purpose and structure of the examination must of course be taken into account; obviously, for example, the range of subjects and the degree of incentive are relevant in considering the suitability of a particular examination as a measure of attainment. In Ireland, there are two types of examinations which are taken by pupils at the termination of the primary school curriculum, one the primary leaving certificate which is taken by the majority of pupils and secondly, the annual examination conducted by the Department for scholarships to post-primary schools. Of these two the latter is more likely to be suitable for the purpose of comparisons between different schools, since the former may be influenced by differences in the age pattern of the general outflow from national schools to post-primary schools, as between rural children (mainly in small schools) and urban children (mainly in large schools). These differences in outflow, which mean that many pupils leave before taking the primary certificate examination, suggest that this examination may not be a useful indicator. It has been decided, therefore, to use data from the scholarship examinations.

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[13] Appendix V.B.

TABLE 9.12

National Schools: Number of Pupils and Number of Post-Primary Scholarships obtained in 1963, by Size of School (Number of Teachers employed).

	Number of Teachers Employed in School					
	1	2	3	4–6	7 and over	Total
Number of Pupils[1]	13,185	129,080	87,343	75,744	177,268	482,620
Percentage Distribution ...	2·7	26·7	18·1	15·7	36·8	100
Number of Scholarships Obtained[2]	22	302	226	189	914	1,653
Percentage Distribution ...	1·3	18·3	13·7	11·4	55·3	100

[1] As in Table 9.2. [2] *Source:* Department files. Excluding 236 Scholarships obtained by pupils already attending secondary schools.

TABLE 9.13

National Schools: Number of Pupils and Number of Post-Primary Scholarships obtained in 1963, showing the cities separately

	Number of Teachers Employed in School					
	1	2	3	4–6	7 and over	Total
City Schools[1]						
Number of Pupils	312	3,881	7,228	25,738	110,974	148,133
Percentage Distribution ...	0·2	2·6	4·9	17·4	74·9	100
Number of Scholarships Obtained	1	—	6	24	564	595
Percentage Distribution ...	0·2	—	1·0	4·0	94·8	100
Rest of Schools						
Number of Pupils	12,873	125,199	80,115	50,006	66,294	334,487
Percentage Distribution ...	3·8	37·4	24·0	15·0	19·8	100
Number of Scholarships Obtained	21	302	220	165	350	1,058
Percentage Distribution ...	2·0	28·5	20·8	15·6	33·1	100

[1] Including the schools in Dun Laoghaire and County Dublin.

9.28 Table 9.12, accordingly, shows the numbers of such scholarships[14] obtained in 1963, analysed by size of school. In Table 9.13 data for the cities and the rest of the country are shown separately. A further 236 of these scholarships were obtained by pupils who were already at secondary school: they are not included here.

9.29 It will be seen from these tables that the proportion of scholarships going to small schools is not commensurate with their share of the pupils—despite the fact that in many counties a number of scholarships are reserved for small schools.

9.30 This difference could of course be due to the fact that some schools might not encourage their pupils to enter for the examinations, rather than to inferior examination performance. An analysis of a few areas indicated that only about one-third of the schools in those areas had entered pupils for the scholarship examination either in that year or in either of the two preceding years. Of course small schools would not on average have pupils of scholarship ability every year. Whatever the reasons, the conclusion remains that pupils of small schools are at a disadvantage compared with those of larger schools in the matter of scholarships. This does not necessarily mean of course that the education they receive is not as good or better than that in the large schools, but it does affect their chances of proceeding further. It has indeed, been argued that undue concentration on the scholarship examination at this stage is not in the best interests of the pupil—we do not have the data to say whether scholarship holders do better than others subsequently.

AGE/STANDARD DISTRIBUTION OF PUPILS

9.31 Examinations refer, however, only to pupils who complete courses; some other measure is necessary, therefore, to assess the overall pattern of attainment. One indicator which suggests itself for this purpose is the age/standard[15] distribution of pupils. While standard is not necessarily an indicator of attainment, since no levels of attainment are prescribed for promotion, we shall proceed for the moment on the hypothesis that the standard in which a pupil is enrolled is an indicator of his attainment. If standard is then related to the ages of the pupils a useful impression of their general position may be obtained.

9.32 Pupils who are in first standard at the age of 7 (on 1 February) should, with regular promotion, be in sixth standard at the age of 12 and thus be between 12½ and 13½ years of age on completion of sixth standard. As most pupils are promoted regularly and fall into this category, they may be termed 'modal' pupils (modal meaning most common). The remaining pupils may be related to this modal group by terming as 'advanced' pupils whose age/standard situation is such that with regular promotion they would be in sixth standard at an earlier age; pupils who would be older than 12 may be termed 'delayed' pupils. The word 'delayed' is used only in a relative sense here. For convenience in later discussion it may be useful to apply the terms D1 to pupils 'delayed' one year and D2 to those 'delayed' for two years or more. Applying these concepts to the pupils enrolled in national schools at 1 February, 1963 the percentage of pupils who fall into each category is as shown in Table 9.14.

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[14] Including Gaeltacht scholarships. There is a detailed consideration of the scholarship examination in Appendix IX.B.

[15] 'Standard' is used here in a sense identical with the use of the term 'grade' in UNESCO publications.

TABLE 9.14

National School Pupils by Progress and Standard, on 1 February, 1963. (Excluding Pupils in Special Schools and Special Classes)[1]

Degree of Progress (cf. par. 9.32)	Standard						
	Infants[2]	1st	2nd	3rd	4th	5th	6th
	Percentages						
Advanced	—	21·2	17·8	15·9	14·3	15·4	13·3
Modal	89·8	54·4	51·4	47·4	45·5	40·6	45·2
Delayed	10·2	24·4	30·8	36·7	40·2	44·0	41·5
TOTAL ..	100	100	100	100	100	100	100
Delayed ..D1 ..	9·3	21·1	24·5	27·4	27·7	30·5	34·5
..D2 ..	0·9	3·3	6·3	9·3	12·5	13·5	7·0

[1] Pupils in industrial schools are included.

[2] The position in Infants is not directly comparable with that in the other standards as Infants covers two standards.

9.33 Table 9.14 excludes pupils in special schools and those in special classes (in ordinary schools) for mentally or physically handicapped children. It also excludes pupils in standards higher than sixth.

9.34 It will be noted that the percentage of 'delayed' pupils rises steadily with progression through standards. This indicates that 'delay' cannot be said to be solely the result of the age at which pupils actually start school. One would expect that with increasing age the effects of differences between the pupils would become more marked and the effects of differences in entry age would become less marked. It will be seen, however, that the percentage of 'advanced' as defined by us actually decreases.

9.35 Two figures in the table, relating to D2 pupils, may be worthy of comment. The figure of 13.5 per cent shown for D2 pupils in fifth standard implies that this proportion of pupils would reach the school-leaving age (14) without completing the sixth standard.

9.36 The second figure worth noting in Table 9.14 is the figure of 7 per cent D2 pupils in sixth standard. As these pupils are already over the school leaving age, the figure may be an indicator of the number who remain on at school in order to complete the national school programme. It should not be taken as an indicator of the number of pupils who reach the school-leaving age with this degree of 'delay', since some pupils would have already left school by February. As such, the figure for sixth standard is not fully comparable with the other figures in the table..

9.37 The results of analysing the age/standard pattern of all pupils on the basis of centrality, religion and school size are summarized in Table 9.15 (full details are contained in Appendix IX.C). It will be observed that smaller schools have a higher proportion of 'delayed' pupils in each standard compared with the larger schools, but the difference between small rural schools and medium sized rural schools is quite small. The extent to which these differences may be due to differences in the age of entry or exit is not altogether clear. Since 'infant' classes span a two-year period the proportion of pupils who appear as 'delayed' is presumably about half of the figure which would be obtained were these classes to be shown for a one-year span. The data for first standard may, therefore, be taken

TABLE 9.15

National Schools—Percentage of 'delayed' Pupils by Size, Centrality and Religion of School, on 1 February, 1963

(Excluding Pupils in Special Schools and Special Classes).

Type of School[1]	STANDARD							
	Infants	1st	2nd	3rd	4th	5th	6th	Change between 1st and 5th standards
	Percentage of Pupils 'Delayed'							
Catholic								
Small—Urban ...	14·6	30·1	35·8	41·6	46·1	49·8	42·4	+19·7
Small—Rural ...	18·8	30·0	35·6	41·4	45·1	48·0	45·5	+18·0
Medium—Urban	9·7	23·5	27·9	33·9	37·4	42·3	39·6	+18·8
Medium—Rural...	11·0	25·7	32·3	40·1	42·9	48·3	48·1	+22·6
Large—Urban ...	7·6	17·7	25·3	30·5	33·6	40·2	37·3	+22·5
Large—Rural ...	5·7	13·4	20·6	26·4	30·2	31·1	30·4	+17·7
Protestant								
Small —Urban ...	5·6	11·7	12·8	20·6	23·8	26·0	29·6	+14·3
Small—Rural ...	6·0	22·9	30·5	36·6	39·5	42·5	39·5	+19·6
Medium—Urban	0·4	1·4	7·6	6·0	13·0	16·2	10·0	+14·8

[1] In this and subsequent tables the terms small, medium and large are used as follows: small 1 to 3 teachers, medium 4 to 6 teachers, large—7 teachers and over. The approximate range of pupils would be: small 0–99, medium 100–299, large 300 and over.

'Urban' includes the cities and towns with population of 1,500 and over. 'Rural' covers all other areas.

as being the first figures which are useful for comparison with the later standards. Similarly at the other end of the scale the data for sixth standard may not be fully comparable because of differences in the rates at which children leave school on attaining the age of 14 or go to post-primary schools. Since the larger schools are often completely full, they may be inclined to encourage pupils to leave at this age, whereas the smaller schools may be quite willing to have them remain on.

9.38 If it is assumed for the moment that the whole of the 'delay' which occurs up to first standard is attributable solely to differences in the age of entry and that fifth standard is the last one for which data are directly comparable, we may, by comparing the changes in the proportion of 'delayed' pupils which takes place between these two standards, form some impression of the 'delay' which occurs during the years the pupil is at school. The last column of Table 9.15 shows these increases in the percentages of 'delayed' pupils for each category of school. Small schools seem to come out reasonably well on this comparison. The figures in this final column are in terms of total pupils; if the extra 'delay' is expressed in terms of the proportion of pupils who were not already delayed by the end of first standard, it will be seen[16] that the rates are the same for the small rural schools as for the large urban schools.

9.39 The inference, therefore, would be that small schools have a higher incidence of delay in the initial years of schooling and an average rate in later years, so that over all they have a higher incidence of delay than the larger schools, though again there is little between the small rural school and the medium sized rural school.

9.40 It is of interest to see whether any light can be shed on the question of whether or not the whole of the initial delay (up to the end of first standard) can be reasonably attributed solely to differences in age of entry. Two considerations might suggest that it cannot. The first is that the high initial delay occurs in both urban and rural small schools, whereas conversely the large schools in both areas have a much smaller incidence of delayed pupils in infants and first standard. While it would appear that on balance urban children (who are mainly in large schools) start school at an earlier age than rural children (who are mainly in small schools) there is no apparent reason why small urban schools should display the same features as small rural ones, nor large rural schools be the same as large urban ones. However, it must be remembered that the number of small urban schools, or large rural ones, is very small, so the data may not be adequate on this point.

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[16] Appendix IX. C, Table 4.

9.41 The second consideration arises from an examination of D2 pupils (i.e. those delayed 2 years or more). Even if children entering small schools do so at the age of 6 (the legal starting point) while children in large schools enter earlier, the former would, if spending two years in infants, be 'delayed' only one year. Hence, it does not follow that significant differences in the incidence of D2 pupils in schools of different sizes can be attributed solely to differences in ages of entry. Table 9.16, therefore, summarizes in a manner comparable to that of Table 9.15 the position with regard to these pupils.

TABLE 9.16

National Schools—Percentage of 'D2' Pupils by Size, Centrality and Religion of School, on 1 February, 1963

(*excluding Pupils in Special Schools and Special Classes*).

Type of School	STANDARD							Change between 1st and 5th standards
	Infants	1st	2nd	3rd	4th	5th	6th	
	Percentage of Pupils 'Delayed' two years or more							
Catholic								
Small—Urban ...	1·9	4·0	8·3	11·5	15·2	18·8	7·6	+14·8
Small—Rural ...	1·2	4·8	8·2	12·0	15·2	16·0	8·5	+11·2
Medium—Urban	1·3	2·4	5·1	7·3	10·4	13·0	6·4	+10·6
Medium—Rural...	1·0	4·4	7·8	11·7	15·8	17·7	10·8	+13·3
Large—Urban ...	0·5	1·6	3·7	5·1	8·3	10·8	4·7	+9·2
Large—Rural ...	—	1·2	3·5	5·1	8·5	9·2	7·3	+8·0
Protestant								
Small—Urban ...	0·3	1·7	2·2	5·8	8·5	9·0	5·3	+7·3
Small—Rural ...	0·7	4·4	8·3	13·0	14·9	15·7	8·2	+11·3
Medium—Urban	—	—	0·8	—	4·6	7·2	3·3	+7·2

It will be seen that the features of this table are similar to those of Table 9.15. It is again the small schools in each centrality which have the highest incidence of D2 pupils in infants and first standard, the medium sized rural school being much on a par with the small rural school. This seems to suggest, therefore, that age of entry is not the sole determinant of 'delay' in the first years of schooling.

9.42 It may also be observed from this table that the rural schools, both medium and small,[17] and the small urban schools have a higher incidence of D2 pupils in later standards. One important reason for considering these pupils separately is that these are the group who would not be in a position to complete the national school programme by the age of 14.

9.43 The general conclusion of immediate relevance to our argument to emerge from this examination of the age/standard position of pupils is that it does not provide evidence that pupils in small schools show greater educational progress than those in larger schools. Of course, we are not in a position to assess the influence of outside factors on the pupils' progress.

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[17] Large rural schools are very few.

9.44 There are, however, some qualifications which must be made to the above data as a basis for precise comparisons. Very little is known about the behaviour of cohorts of pupils as they progress through the system. The promotion, retention and outflow patterns of pupils must obviously have a major influence on the age/standard pattern. It is known for instance, that with progression increasing numbers of pupils are kept back in standards. We also know that from second standard onwards, there are significant outflows of pupils from the schools so that the size of the cohort remaining gradually decreases. To examine these matters in full we would have required individualized data for consecutive years. Until such data become available it will not be possible to say with any degree of certitude how the rate of delay varies as between different types of school. A second point is the paradox that it is the large schools, where the highest percentage of large classes occurs that have the lowest percentage of 'delayed' pupils. It may well be that the promotion of children in these schools is influenced by the pressure of numbers.

9.45 For the present, then, the concept of 'delay' may need to be used with caution. Pupils in rural schools, who tend to start later than those in urban schools could become 'delayed' much more easily. In the urban (mainly large) schools on the other hand, they may not only start earlier, but their promotion may be due, at least in part, to pressure of numbers. Hence the phenomenon of 'delay' may well be somewhat difficult to interpret in these cases. Over and above all this, however, small schools may still be more prone to keep pupils back in a standard. If, however, these qualifications are borne in mind, it would seem that this concept of age/standard, as a possible means of assessing benefits, may prove to be a useful one.

9.46 Apart, however, from any question of its uses as a measure of benefits derived by pupils, a consideration of the age/standard pattern is clearly relevant to discussions of the age at which children should transfer from primary to post-primary education. In this country, the age of 12 plus has been mentioned[18] and seems to be gaining acceptance. The circumstances, therefore, in which 44 per cent of the pupils in fifth standard in February, 1963, could not complete the primary school course by that age (and 13.5 per cent could not complete it by 14 years) would seem to merit close examination.

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[18] Council of Education.

SCHOOL CURRICULA

9.47 Since the measures of pupil attainment present certain difficulties, an alternative approach to the question of benefits might be to examine the pattern of courses available to pupils in various types of school. The subjects taught in the national schools are described in chapter I, paragraph 1.10. The amount of time during which pupils are to receive instruction is prescribed at just under five hours daily for five days a week, with a reduction of an hour a day for infants. This would give an average weekly time of 22½ hours, or 855 hours a year on the basis of the prescribed minimum of 190 days. For present purposes it would be desirable to know the number of schools that include the various subjects listed in chapter I in their curricula and the amount of time devoted to these subjects. The actual allocation of school time is not, however, available and to obtain it would require the analysis of the time-tables of the individual schools. This was not possible in the time available to us. In the absence of such an analysis we are dependent on common observation, the consensus of which suggests that the average division of time per week is roughly as follows:—

Religious instruction 2½ hours, vernacular languages 10 hours, (Irish and English in the approximate ratio of 2:1), arithmetic 5 hours, and 5 hours to other subjects (music, needlework etc.) with about 1 hour each to history and geography in the upper standards. (The classes in 'secondary tops' are excluded from these comments since these follow the secondary school programme). It would appear that the use of Irish as a medium of instruction is very limited outside of infant classes. The number of national schools outside the Gaeltacht areas in which all subjects (except English) are taught through Irish is 135 out of a total of about 4,550 schools.[19] In only 404 other schools are two or more consecutive standards other than infants taught through Irish.[20]

9.48 Within this general pattern there are certain deviations as between schools of different types. Thus, in the case of mathematics (which is a compulsory subject for all schools), the algebra and geometry sections of the course are optional for 1 and 2 teacher schools, for 3 teacher mixed schools and in all classes taught by women. In the case of the other compulsory subjects (Irish, English, music, needlework, history and geography where appropriate) no explicit latitude is given, though there is provision for modifications necessitated by circumstances in the smallest schools.

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[19] Annual Report 1962/63 (excluding about 250 Gaeltacht schools).

[20] ibid.

9.49 The section on school facilities will show that the likelihood of the various optional subjects (drawing, physical training, rural science or nature study, cookery (girls), laundry (girls), domestic economy (girls) and manual instruction (boys)) being made available is very much smaller in the smaller schools. In general, therefore, it seems safe to conclude that the pupil of the smaller school is likely to have a more restricted curriculum available to him or her than is available in larger schools.

FACILITIES AND AMENITIES IN NATIONAL SCHOOLS

9.50 A supplementary method of considering the quality of the educational environment available to pupils might be to examine the facilities available in the schools. Details on this aspect were obtained from questionnaires sent to the schools. Returns were obtained from 4,795 schools. Table 9.17 shows the distribution of these schools by size and by year built. It will be observed that 2,167 schools or 45 per cent of all the schools were built before 1900. Indeed, 65 per cent of one-teacher schools are in nineteenth century buildings. Copies of the questionnaires and the detailed results of the processing of the returns will be found in Appendix IX.D.

TABLE 9.17

National Schools by Period Built and by Size, (number of Teachers), 1963/64 (excluding Special Schools)

Size of School (Number of Teachers)	Period in which schools were built							TOTAL
	Before 1850	1850–99	1900–21	1922–34	1935–64	Period not known	School Untraced[1]	
	Number of Schools							
1 Teacher	123	357	100	30	85	31	10	736
2 Teachers	178	938	338	179	767	52	13	2,458
3 Teachers	47	276	98	68	371	13	5	878
4–6 Teachers ...	36	127	45	29	151	17	—	405
7 Teachers and over	20	70	29	24	197	4	—	344
TOTAL ...	399	1,768	610	330	1,571	117	28	4,821

[1] Since the number of schools obtained through the February Census, 1964 was 4,800 (Chapter 1) it is likely that some of the 'untraced' schools are no longer in operation.

9.51 All the returns were processed in respect of drinking water and sanitary facilities. The results are given in Table 9.18. It will be seen that scarcely a third of one- and two-teacher schools have drinking water available either in the school or on the school site. In

TABLE 9.18

Percentage of National Schools having Drinking Water and Various Forms of Sanitation, 1963/64

Size of School (Number of Teachers)	Drinking Water in School or on School site	Form of Sanitation			
		Flush Toilet	Chemical Closet	Dry Latrines	Other
	Percentage of Schools				
1 Teacher . .	28·5	25·9	6·1	62·9	5·1
2 Teachers . .	33·7	31·7	1·3	63·4	3·6
3 Teachers . .	60·6	59·9	0·2	37·6	2·3
4 Teachers and over	95·1	95·4	—	4·2	0·4
All Schools . .	47·4	45·9	1·6	49·4	3·1

other words over 2,000 small schools do not have drinking water and about the same number do not have flush toilets or chemical closets. Almost all of the large schools have drinking water and flush toilets.

9.52 For the other facilities other than water and flush toilets, (equipment etc.) the returns were processed only in respect of a sample of schools. This sample covered 641 schools or approximately 13 per cent of the total. Approximately this proportion of all schools in each teacher-size category was included in the sample. The proportions by age proved to be a little biassed, there being rather more of the older small schools in the sample. However, a check using the water and sanitation data showed only a slight deviation from the aggregate result.

9.53 The results for these items are presented in Tables 9.19 to 9.22. The survey of heating and electricity for Tables 9.19, 9.20 was carried out by the Department. Table 9.19 shows that few of the small schools, but most of the large schools have a heating system other than open fires. Table 9.20 shows that the small schools also lag behind in the matter of electricity supply.

9.54 Tables 9.21, 9.22 relating to school equipment and special rooms show that the smaller schools are relatively poorly equipped. The returns suggest library facilities are an exception to the large disparity in most items. In particular instances the data may also provide some indication of the likelihood that certain optional subjects will or will not be provided. Thus the data on cookery equipment suggest that this subject is not available in the bulk of the small schools (even though a few small schools are known to have external arrangements for cookery).[21]

9.55 The broad conclusion which emerges from this brief summary of school facilities is that the physical facilities of the smaller schools are very much inferior to those of the larger schools. Such handicaps are relevant to assessing the work of the small schools. It is obvious, of course that the more schools there are, the more expensive it is to provide comparable facilities in all of them.

TABLE 9.19

Percentage of National Schools using Various Forms of Heating

Size of School	Form of Heating				
	Open Fires	Stoves	Central Heating	Storage Heating (Electricity)	Total
	Percentage Distribution				
1 teacher	62·0	32·3	1·8	3·9	100·0
2 teachers ..	76·7	16·9	2·3	4·1	100·0
3 teachers ..	64·7	14·5	9·9	10·9	100·0
4 teachers and over	18·5	6·0	58·2	17·3	100·0
All schools ..	63·0	17·2	12·4	7·4	100·0

Source: Department of Education Survey.

TABLE 9.20

Percentage of National Schools with Electricity, 1962/63

Size of School (Number of Teachers)	Electric Current	Power Points	Electric Water Pump
	Percentage of Schools		
1 teacher	45·9	36·7	3·1
2 teachers	54·3	49·9	11·5
3 teachers	72·9	56·8	18·4
4 teachers and over	92·8	74·3	26·0
All schools	62·5	53·0	13·8

Source: Department of Education Survey.

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[21] Further tables in the Appendix give the number of schools with caretakers, the number of two storied schools with a fire escape, etc.

TABLE 9.21

Percentage of National Schools with Various Kinds of Equipment by Size of School, 1963/64

Size of School (Number of Teachers)	Equipment for special subjects				Audio-visual aids							Library		
	Cookery	Laundry	Manual Instruction	Rural Science	Strip Projector	Sound Film Projector	Tape Recorder	Record Player	Radio	Television	Other	Library	Special Library Room	County Library Service
	Percentage of Schools													
1 teacher	1·1	1·1	4·4	3·3	2·0	0·4	1·0	2·4	1·5	—	0·4	34·3	—	32·2
2 teachers	7·4	2·4	5·6	4·4	1·7	0·9	2·0	2·5	0·7	0·1	0·2	43·1	0·3	54·9
3 teachers	16·4	7·8	6·9	5·2	4·4	1·1	2·7	4·1	0·9	0·3	0·1	39·7	2·6	56·0
4 teachers and over	41·7	30·2	2·1	4·2	24·7	12·7	14·8	24·8	4·0	1·8	1·5	47·9	11·5	40·6
All Schools	18·3	7·3	5·1	4·4	5·6	2·7	3·9	6·1	1·3	0·4	0·4	42·0	2·3	49·8

Source: Questionnaires completed by school managers.
NOTE: The information on equipment and libraries was processed on a sample basis. The information on audio-visual aids covers all schools.

TABLE 9.22

Percentage of National Schools with Special Rooms, 1963/4

Size of School	Assembly Hall	Music Room	Domestic Science	Science	Art	Principal's Room	Staff Room	Dining Room	Other
	PERCENTAGE OF SCHOOLS								
1 teacher	—	—	—	—	—	—	1·1	—	4·4
2 teachers	1·2	—	1·2	—	—	1·5	8·0	0·3	5·0
3 teachers	0·9	0·9	2·6	0·9	—	4·3	17·2	0·9	4·3
4 teachers and over ..	36·5	15·6	35·4	2·1	—	46·9	43·7	4·2	9·4
All Schools ..	6·2	2·5	6·4	0·5	—	8·6	14·0	0·9	5·5

Source: Questionnaire completed by school managers.

SUMMARY OF BENEFITS

9.56 The general conclusion which emerges from the various indicators of benefits (number of post-primary scholarships, age/standard progression of pupils, curriculum available and school facilities) is that the small schools do not appear to provide any greater educational benefits for their pupils which would offset their greater costs. The inference, indeed, is in the opposite direction, namely that the smaller schools confer lesser benefits on their pupils. Of course it does not necessarily follow that these differences in performance (in so far as our indicators are valid) are due primarily to the *size* of the schools. The differences may arise from other factors which happen to be associated with the small schools. For instance, differences of environment between pupils, difficulties affecting school attendance, etc. may be the causative factors of differences in performance. If such is the case, and if such factors were to persist, then it would not necessarily follow that merely bringing about an increase in the size of schools would eliminate the differences in performance. In view of the differences in teacher utilisation and teaching costs which are, of course, related directly to *size* (given the traditional form of the Department's regulations regarding teacher numbers) there appears, however, to be enough evidence to merit an examination of the feasibility of alternatives to the present school organisation. In this connection we turn next to a consideration of the school building programme.

BUILDING OF NATIONAL SCHOOLS

9.57 Grants are given by the State towards the cost of erecting new national school buildings and towards the cost of replacing existing obsolete buildings, subject to certain conditions. In general these conditions specify that the Minister for Education is satisfied that the necessity exists for a new building; that a suitable site has been obtained by the local manager; that a lease of the site for the purposes of national education will be executed to trustees; that a local contribution will be provided towards the costs of erecting the building and that, when completed it will be maintained in proper condition.[22]

9.58 The decision to erect a new building is taken in the Department of Education. The responsibility, however for making the preliminary arrangements is shared by the Office of Public Works, the Department of Education and the local manager. The general procedure for (a) replacing an existing obsolete building, (b) erecting a new non-replacement building, is as follows:—

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[22] See Rules for National Schools (S.O.).

9.59 **Replacement buildings:** When the local manager, or the inspector or medical officer draws the attention of the Department of Education to the unsatisfactory condition of a school building, the Office of Public Works is asked to furnish a report on the structural and sanitary condition of the building and to give their view as to whether the building should be replaced.[23] This report is considered in the Department and if it is agreed that the building is no longer suitable for school purposes, the question of whether any re-arrangement of the school facilities in the area might be desirable is investigated. In some areas it is clear that the erection of a new permanent school building would be an uneconomic proposition. Before the concept of temporary buildings (prefabricated etc.) was accepted, cases of this kind were usually 'streamed off' and labelled 'unlikely to mature'.[24] In these cases the Office of Public Works might undertake essential work to make the school serviceable for a limited period.

9.60 Where it is decided that the old building is obsolete and should be replaced, the manager is asked to offer a site for a new building. When a site is offered the Department ensures that it is suitably located in relation to the homes of the pupils and decides the size of the new building, having first investigated the question of the probable future trend of attendance at the school. At this stage the Office of Public Works is asked to examine the site and furnish sketch plans and an estimate of the cost of the proposed new school. (In the case of a building with more than seven classrooms, the manager is authorised to employ a private architect to make the architectural arrangements—to prepare sketch plans etc. The architects fees in such cases are allowed for grant).

9.61 When sketch plans are prepared the Department enters into negotiations with the manager regarding the amount of local contribution to be provided. The Department's rules and regulations state that 'the amount of the grants to be made is normally two-thirds.' In almost all cases, however, grants in excess of two-thirds are allowed. In fact, grants allowed by the State between 1952 and 1962 averaged 86 per cent of the cost of new school buildings and major improvement schemes.

9.62 The manager must also secure satisfactory evidence of title to the school site before the grant may be sanctioned. This title must allow that the school site be vested in local trustees by an official lease for a period of 99 years. The Minister for Education is a party to this lease: the formal document is drawn up by the Chief State Solicitor, who is the Department's legal adviser.

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[23] There is no systematic procedure by which the Department is notified as soon as a building becomes unsatisfactory. This means that many buildings throughout the country may be in an unsatisfactory condition for some years before the Department is aware of the necessity for investigating the matter.

[24] It is not always clear whether these 'unlikely to mature' buildings were included in the Department's series of obsolete buildings.

9.63 When title to the school site is in order and the amount of the local contribution is decided, a grant for the new building is sanctioned by the Department. It is then a matter for the Office of Public Works to prepare working drawings and specifications and to invite tenders fro the new building. When a suitable tender has been accepted, the actual construction of the school commences.

9.64 **Non-Replacement buildings:** These are generally required in urban areas where the population is increasing and new housing schemes are being provided. Preliminary investigations are carried out by the Department as to the educational requirements of the areas. When a decision has been reached regarding the necessity for a school and the size of the building determined, the administrative machinery is set in motion. The procedure is the same as in the case of replacement buildings.

TABLE 9.23 (*a*)

Average Time elapsing between Decision to Replace and Completion of New School, for Replacement[1] *Schools completed in* 1957/8 *and* 1961/2

School Size	Number of Schools	Average Time Elapsing	Of which average time between acceptance of tender and completion of building
6 classrooms and under	95	12 years 11 months	1 year 3 months
7 classrooms and over ..	21	10 years 4 months	1 year 7 months
All schools ..	115	12 years 5 months	1 year 4 months

[1] The average time elapsed for the 9 non-replacements was 6 years 1 month.

TABLE 9.23 (*b*)

Percentage Distribution of Replacement[1] *Schools by Time Elapsed*

Time elapsed between decision to replace and completion of new school	Size of School		
	6 Classrooms or under	7 Classrooms and over	All
	PERCENTAGE DISTRIBUTION		
5 years or less	9·5	19·0	11·2
5 to 10 years	40·0	33·3	38·8
10 to 15 years	12·6	33·3	16·3
15 to 20 years	15·8	9·6	14·5
Over 20 years	22·1	4·8	19·2
TOTAL	100·0	100·0	100·0

[1] Of the 9 non-replacement schools, the time elapsed was under 5 years for one and 5–10 years for the rest.

9.65 A sample of schools was selected in an attempt to examine the length of time associated with this procedure. Schools completed during the two years 1957/58 and 1961/62 were examined and the results obtained are summarised in Tables 9.23 (a) and (b).[25] The number of schools in the sample was 125 which included 9 non-replacement; leaving 116 as the number of replacement schools.

9.66 It will be seen that the time elapsing between the recommendation to replace and the completion of a school was considerable. Of the total time, only a small amount was accounted for by the actual building work. The bulk was accounted for by the administrative procedures described above. It will be seen that, as might be expected, this period is much shorter in the case of non-replacement as compared with replacement schools.

9.67 It is not proposed to attempt any apportionment of this time interval over the parties involved in school building; Department of Education, Office of Public Works and the school managers. Some of this delay is inevitable with existing arrangements. A manager often finds it difficult to obtain a suitable site. There may be difficulties in regard to title (in Ireland this problem of clear title is not of course peculiar to land for school building). Sometimes, a school has to be delayed to enable a school building to benefit from a sewerage or water supply scheme being developed by the local authority. Nevertheless, in the past there appear to have been some unreasonable delays. Now that the Department and the Office of Public Works have been organised to carry out the present programme of a hundred new schools and fifty major replacements annually, it would seem a matter of importance that delays be reduced to a minimum.

9.68 The attached diagram (Chart 9.4) illustrates the various stages from the point at which a school is declared 'obsolete' to the point at which a new building is actually made available.

THE SCHOOL BUILDING PROGRAMME

9.69 In considering the school building programme, there are two major determinants of the level of activity; first the suitability of existing buildings and secondly the existence of a policy as to the rate at which unsuitable buildings should be replaced. A major influence on the suitability of a building is its age. This may be

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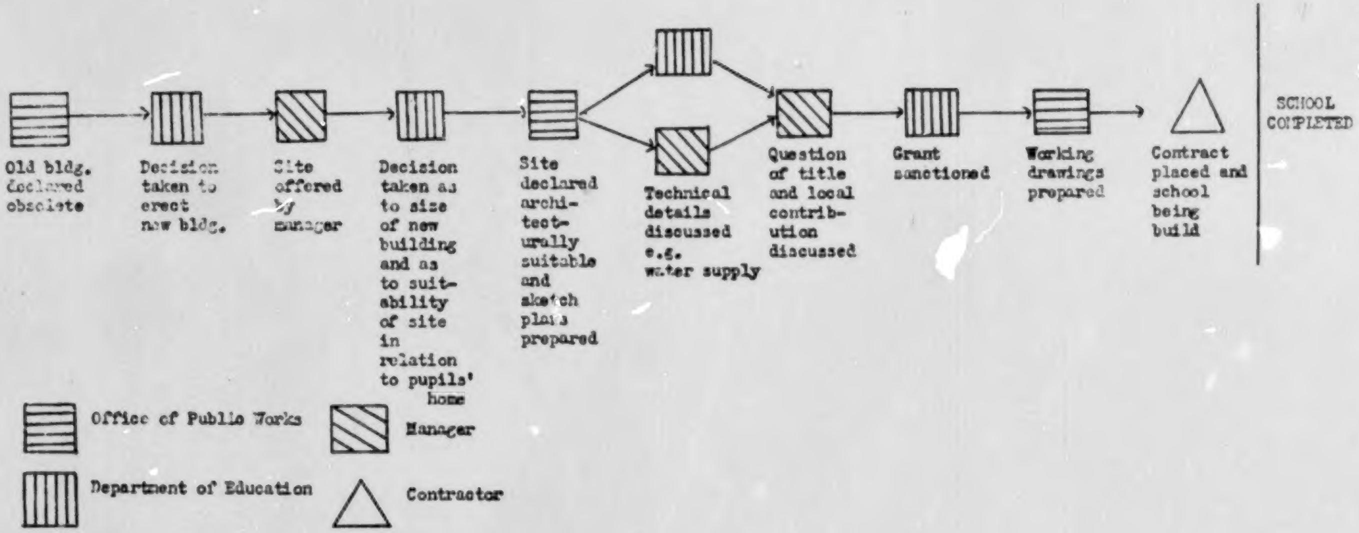
[25] Details in Appendix IX.E.

CHART 9A

BUILDING OF NEW NATIONAL SCHOOL.


Old bldg. declared obsolete
Decision taken to erect new bldg.
Site offered by manager
Decision taken as to size of new building and as to suitability of site in relation to pupils' home
Site declared architecturally suitable and sketch plans prepared
Technical details discussed e.g. water supply
Question of title and local contribution discussed
Grant sanctioned
Working drawings prepared
Contract placed and school being build
SCHOOL COMPLETED
Office of Public Works
Manager
Department of Education
Contractor

clearly seen from Table 9.24 which shows the approximate age distribution of national schools in ten year age groups and the number declared 'obsolete' in each group by the Office of Public Works. The data on age distribution were compiled from a questionnaire on school facilities completed by school managers in 1964 (paragraph 9.50) supplemented by a check through departmental records. In a very few cases the age was estimated. It will be seen that almost all the 'obsolete' schools were in the age groups 50 years and upwards.

TABLE 9.24

National Schools by Age, as on 31 *March*, 1964[1]

Age in Years	Number of Schools	Percentage Distribution	Number declared obsolete[2]	Percentage declared obsolete
0–9 ..	756	15·7	—	
10–19 ..	481	10·0	—	
20–29 ..	366	7·6	—	
30–39 ..	363	7·3	10	2·8
40–49 ..	110	2·3	10	9·1
50–59 ..	310	6·5	36	11·6
60–69 ..	450	9·3	66	14·7
70–79 ..	623	13·0	196	31·5
80–89 ..	345	7·2	750	55·1
90–99 ..	269	5·5		
100 and over	748	15·6		
TOTAL ..	4,821	100·0	1,068	22·1

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[1] Excluding special schools.

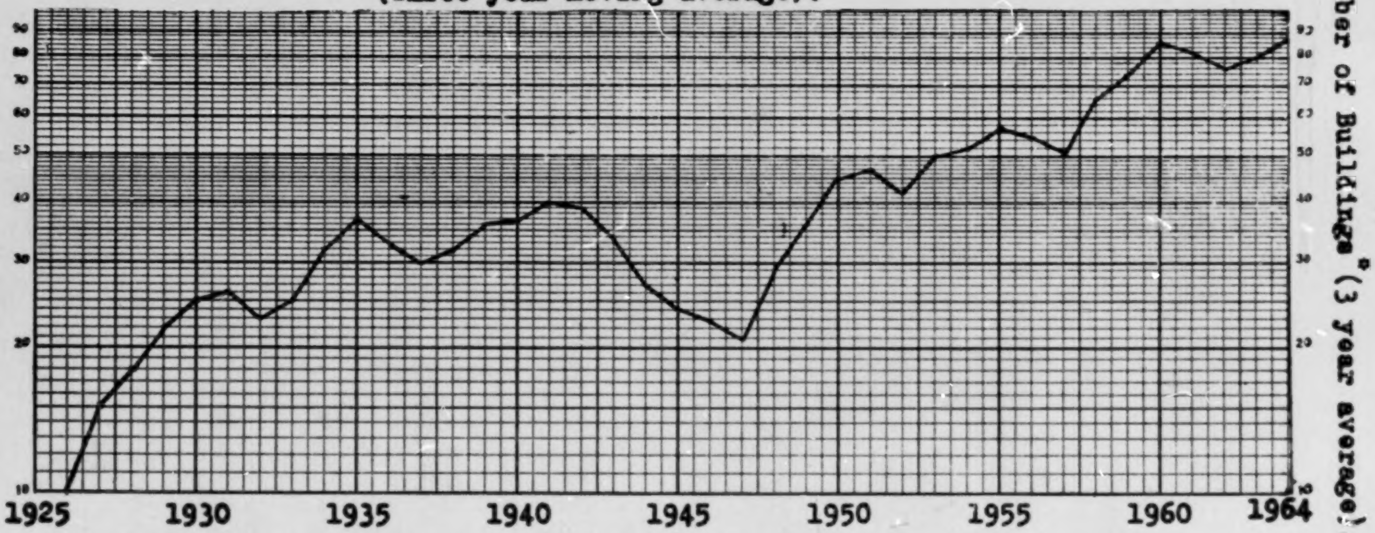
[2] There may be other reasons apart from the condition of premises for declaring a building obsolete. Thus three schools in the age group 30–39 years were too small to cater for expanding populations. It was found that it would be more economic to replace than to enlarge them.

9.70 There is, however, a certain ambiguity surrounding a concept of 'suitability' which might be derived from such a table. It refers only to schools which have not been formally declared obsolete. It has been noted earlier that there is no systematic procedure by which the Department is notified as soon as a building becomes unsatisfactory, hence there may be some schools which if formally examined would be declared 'obsolete'. It may be convenient, therefore, to have an alternative measure of the adequacy or otherwise of schools. One measure which may be of use is the concept of a reasonable life for school buildings. At present the Office of Public Works generally regards 80 years as being the expected life of buildings, hence an alternative measure of suitability might be buildings which are less than 80 years of age and which have not been declared 'obsolete'. The term 'effective' will be used to describe this category. All other buildings; i.e. those over 80 years, together with

GRAPH 9.2

NUMBER OF NATIONAL SCHOOL BUILDINGS* COMPLETED
EACH YEAR SINCE 1926.

(Three year moving average).



*Note: The number of schools is slightly larger.

schools under 80 years which have been declared obsolete, may be termed 'non-effective'. It should be emphasised that this classfication is not intended to reflect the actual condition of any building—the fact that an 80 year expectancy is attached to schools built at the present time, for example, does not mean that a similar expectancy applies to buildings erected 50 or 100 years ago: equally it may not hold in the future. The classification should be regarded only as an indicator of the potential requirement of new buildings in future years.

9.71 The second determinant of building rates, namely official policy, may be briefly dealt with. At the present time the policy is to erect 100 new schools and to complete major improvements on 50 schools, each year.

9.72 Using these data as a base, the future position regarding national schools may be estimated. Of the 4,821 operative national schools in the country in March, 1964, 1,068 or 22.1 per cent had been declared obsolete by the Office of Public Works. These schools are contained in 1,005 school buildings.[28] Building work was in progress in the case of 157 of these buildings and a decision had been taken to postpone the replacement of a further 186, due to uncertainty as to the future need for schools in certain areas and to other reasons. Consequently, 662 buildings, other than those where building work is in progress, are scheduled for replacement. In addition 20 new non-replacement buildings have been proposed and arrangements are being made for their erection.

9.73 Table 9.25 shows for each five year group since 1957 the number of buildings on the obsolete list (including buildings for

TABLE 9.25

National School Buildings, Actual and Projected Series for Replacement

Period	Total Number of Buildings declared obsolete	Replacement Position		
		Grant not yet sanctioned	Unlikely to Mature	Sanctioned not yet completed
	Yearly Average Number of Buildings			
1957–59	1,053	661	160	232
1960–64	995	592	173	230
1965–69	984	542	185	257
1970–74	963	517	185	261
1975–80	944	492	185	267

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[28] A distinction must be made between schools and buildings. A building often contains two or more schools, e.g., a boys' and a girls' school. No data are available regarding the number of national school buildings in the country but an analysis of the data relating to obsolete schools (almost 25 per cent of all schools) shows that for every 100 buildings there are approximately 107 schools.

which grants had been sanctioned and buildings where a decision had been taken to postpone replacement). This table has been projected to 1980 on the assumptions (1) that the number of schools becoming obsolete each year ('new cases' on to the obsolete list) will remain constant at the present level of about 90 per annum; (2) that the existing administrative procedures relating to rebuilding are maintained and (3) that the number of buildings completed in each year to 1970 will be 100, after which the number will increase gradually to 120 by 1980. These figures include the projected completion of about 10 non-replacement buildings per annum to 1980.

9.74 These assumptions revolve around a 'life' of 80 years for a building. We have already indicated that this may not be valid in the future. One factor which could affect it would be an improvement in standards of maintenance. Until recently, maintenance was a matter almost entirely for the managers. The results, we understand, have not been altogether satisfactory. An inter-departmental committee on school building which reported to the Ministers for Education and Finance in 1961, expressed the view that the State's investment in school building had been allowed to deteriorate very rapidly through lack of adequate maintenance.[27] State grants are now being paid towards the cost of painting schools. With this stimulus an improvement in standards of maintenance may be expected with a consequent prolongation of the life of school buildings. For these reasons our projections for 1980 may be regarded as indicating the least favourable position. Nevertheless, we are not disposed to regard them as needlessly pessimistic. Standards of school buildings seem to be changing with great rapidity: the possibility cannot be excluded that standards of school accommodation and facilities now considered satisfactory, will be regarded as inadequate by 1980.

9.75 Tables 9.26 and 9.27 show the likely outcome of this building programme. By 1980 there will have been a significant change in the age structure of the buildings; the percentage 'non-effective' should be 23 per cent against about 40 per cent in 1965. As this should mean that virtually all the nineteenth century buildings would have been eliminated, the great bulk of school buildings in 1980 should be structurally sound. Viewed in this light the fact that by that date the proportion of schools declared obsolete will have decreased by less than 14 per cent is not of itself an indicator of inadequate progress. As already indicated this projection of obsolete schools is based on the *status quo;* it assumes no improvement in

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[27] Report of the Interdepartmental Committee on standards of Planning for National and Vocational Schools, paragraphs 110–111. (Unpublished).

TABLE 9.26

Number of Operative Schools[1]

Year	Total Number of Schools	Regarded as Suitable				Declared Obsolete			
		80 Years and over	Under 80 years	Total	Percentage of all Schools	80 Years and over	Under 80 years	Total	Percentage of all Schools
1960	4,882	900	2,904	3,804	78·0	800	278	1,078	22·0
1965	4,864	854	2,931	3,785	77·8	800	279	1,079	22·2
1970	4,861	619	3,192	3,811	78·4	830	220	1,050	21·6
1975	4,866	400	3,436	3,836	78·8	818	212	1,030	21·2
1980	4,878	200	3,773	3,973	81·5	730	175	905	18·5

[1] Including special schools.

TABLE 9.27

Derived data on 'Effective' Schools[1]

Year	Total Schools	'Effective'		'Non-effective'	
		Number of Schools	Percentage of all Schools	Number of Schools	Percentage of all Schools
1960 ..	4,882	2,904	59·5	1,978	40·5
1965 ..	4,864	2,931	60·3	1,933	39·7
1970 ..	4,861	3,192	65·7	1,669	34·3
1975 ..	4,866	3,436	70·6	1,430	29·4
1980 ..	4,878	3,773	77·4	1,105	22·6

[1] Including special schools.

Note: 'Effective' is defined as schools under 80 years of age which are in operation and regarded as suitable.
'Non-effective' covers all other schools which are in operation.

maintenance and that nothing is done to provide essential modern sanitary and other facilities. It must be accepted, however, that dramatic improvements in the condition of schools are not to be expected in the next seven to ten years. The reason for this need not necessarily be in defects of administrative organization; while the Department of Education and the Office of Public Works might be in a position to deal with a bigger programme, other limiting factors such as the supply of capital funds and the capacity of the building industry could be critical factors at any one time. Over the next decade, the demand for investment capital in all sectors of the economy is expected to be extremely heavy. Given the 'large size' of many building projects, the State may find it difficult at certain times to allocate to national school building a greater proportion of available funds. In the interests of reducing cyclical changes in the activity of the building industry phasing of public building contracts might be adopted, some order of priorities for the different types being necessary. School building might well be suitable for short-term increases or reductions provided that over a longer period (say a decade) the average level should accord with the priority which education would warrant as a factor in economic growth.

TEACHER TRAINING

9.76 Data on teacher training are given in Annexe A. Some of the main points that arise are as follows:

(i) The supply of candidates of suitable academic standard is such that it is no impediment to increasing the output of trained teachers. Many have failed because of failure at singing or needlework, accomplishments which might not be essential for individual teachers except for small schools.

(ii) On completion of training, teachers are required to serve for five years as national teachers. If not they must repay the cost of their training. There are no scholarships available to student teachers but only repayable loans.

(iii) More than half of the 400 lay entrants to teacher training in 1963 came from five counties on the western coast (Galway, Mayo, Kerry, Donegal, Clare in that order) and a further 46 were from Cork. On the other hand less than a fifth of the entrants came from Leinster—8 from Dublin.

(iv) No girls took mathematics in the final examination in 1963 and only 14 boys did so, out of a total of 91 boys and 353 girls, although about a quarter of their time as teachers will be devoted to mathematics—in most cases, this is confined to arithmetic.

SUMMARY AND CONCLUSIONS

9.77 The size-pattern and distribution of national schools are the results mainly of political, social and demographic circumstances in nineteenth century Ireland. While these circumstances no longer obtain, the school system has remained fundamentally unchanged, although the total number of schools has of course declined considerably in consequence of the reduction and shift in population. We thus have a large number of small schools, situated mainly in rural areas and a smaller number of large schools, located mainly in towns and cities.

9.78 As between these two types of schools, there is a distinct imbalance in the allocation and utilisation of teaching resources. Seventy-six per cent of national schools have average enrolments of less than 100 pupils. They contain only 38 per cent of all pupils but

50 per cent of all the teachers; pupil/teacher ratios, therefore, are very much lower in these small schools. Correspondingly, ratios are much higher in the large schools and it is in these that there is serious incidence of oversized classes. Over 40 per cent of classes in schools of seven teachers and over have more than fifty pupils; over 50 per cent of the pupils in these schools are in such classes. In the small schools of one to three teachers, only one per cent of classes and three per cent of the pupils are in this position. Classes of forty and over are almost the norm in the large schools and contain 84 per cent of the pupils whereas only 16 per cent of pupils in small schools are in such classes.

9.79 As regards the possible benefits which result from this pattern it was seen that large schools perform best at the scholarship examinations, irrespective of location. The large schools can provide special preparation for the examination and there is no evidence that this is counterbalanced by the more favourable pupil/teacher ratios and smaller classes in the smaller schools.

9.80 There are some indications also that the progression of pupils is slower in the small schools, so that on balance pupils of the smaller schools take longer to complete the full course. The reasons for this are not immediately clear but are not apparently due entirely to differences in age of starting school.

9.81 While we have no information on the structural condition of the various sizes of schools, it will have been noted that small schools have far less satisfactory sanitary and drinking facilities, a high percentage of open fires, a minimum of special equipment and audio-visual aids and virtually no special rooms. And yet, per pupil place they are more costly to erect and the costliest to maintain. It was also observed that the pupil of a smaller school was likely to have a narrower range of subjects available to him.

9.82 An examination of the probable trends in building suggests that the building programme is not likely to change the size pattern of schools. There will apparently, be an accentuation of the trend to larger schools but fundamentally the structure of the system will not be altered. Since this building programme would on present policy result in the elimination of virtually all the nineteenth century buildings by about 1980 which in turn means the replacement or major repair and improvement of well over half the one- and two-teacher schools between now and 1980, there is apparently scope for altering the size-pattern during this fifteen year period.

9.83 For all these reasons, but above all because of the uneven distribution of that scarce and costly resource, teachers, we raise the query whether the present distribution of schools is the most suitable, satisfactory or economical method of providing primary education. In view of the magnitude of the school building programme, it seems to us opportune to consider what alternative arrangements, if any, might achieve the same ends more efficiently and with at least the same degree of satisfaction. Some attempt to do this is made in chapter 12.

CHAPTER TEN

Post-Primary Education

INTRODUCTION

10.1 As post-primary or second level education is more varied in scope than first level education it cannot be discussed in the manner adopted in the case of primary education. On the 'cost' side, however, the allocation of teachers will, as before, be analysed by school size. On the ' benefits ' side the pattern of courses offered is used as the main indicator of the potential 'benefits' provided; a general aggregate analysis only of pupil attainment is attempted because of the variety of subjects.

SECONDARY SCHOOLS

DISTRIBUTION OF SCHOOLS

10.2 In the case of privately owned and operated educational units, the educational system might be expected to be relatively more developed—in the sense of capacity provided—in the principal centres of population and somewhat sporadically developed in other areas. This pattern would, of course, be modified by the introduction of subsidies. Subsidies might be expected to attract units where otherwise they might not exist. In addition, the educational pattern is of course, modified by community values and traditions which result in the provision of separate facilities to particular pupil categories on the basis of religion, sex, language or social class. The aggregate of these factors might be expected to lead to an increase in the number of units provided and to result in the existence of a rather large number of small schools. Table 10.1 shows the position in 1963/64 giving the secondary schools by size and by the size of the centres where they are located. The 24 religious juniorates and the 18 other boarding schools which do not take any day pupils have been excluded from this table, since their location is not related to the population of the area. It will be seen that of the 608 schools shown, 388 are under the minimum of 150 pupils specified by the Department for building grants for secondary schools.

TABLE 10.1

Secondary Schools (including Secondary Tops), by Size and by Centrality, 1963/64.

Size of School / Centrality (Location)	Less than 100 Pupils	100–149 Pupils	150–199 Pupils	200–299 Pupils	300 Pupils and over	TOTAL
	Number of Schools					
Cities	53	34	21	30	36	174
Towns (5,000 and over) ...	19	20	22	30	10	101
Towns (1,500–5,000)	46	49	23	17	8	143
Towns (500–1,500)	73	33	13	5	—	124
Villages (200–500)	28	15	3	1	—	47
Rural	14	4	1	—	—	19
TOTAL	233	155	83	83	54	608[1]

[1] Including 81 secondary tops and excluding the 42 boarding schools which do not accept day pupils.

Source: February Census, 1964.

10.3 Table 10.2 shows the distribution in 1963/64 of the schools in each province, thus providing some indication of the regional availability of schools.

10.4 Participation in secondary education however, depends not only on the availability of schools but also on the ability of parents to pay the fees. These fees are fixed by the schools themselves,

TABLE 10.2

Secondary Schools[1] *(including the* 81 *Secondary Tops) by Sex by Province,* 1963/64 *and Population aged* 13–17 *by Province*

Type of school / Province	Boys' schools	Girls' schools	Mixed schools	Total number of schools	Population[2] aged 13–17
	Number of Schools				('000)
Munster	92	102	23	217	81
Connacht	37	34	24	95	42
Ulster (3 counties)	10	12	10	32	21
Leinster (excluding Dublin) ...	47	77	9	133	62
Dublin (City and County) ...	47	75	9	131	66
TOTAL ...	233	300	75	608	271

[1] Excluding 18 boarding schools (9 boys, 9 girls) and 24 religious juniorates (20 boys, 4 girls), none of which take day pupils.
[2] Census of Population, 1961.

hence there may be some variations as between regions. Table 10.3 shows therefore, the distribution of the schools in each province by fee level. This table is based on data supplied to the team by schools representing 75 per cent of all day pupils. This table relates to the school-year 1961/62 as financial data were available for that year only.

TABLE 10.3

Secondary Schools by Day Fees by Province, 1961/62

(Based on returns accounting for 75 per cent of all day pupils)

Province	Fee per annum for Day Pupils			TOTAL[1]
	Up to £15	£15 to £25	Over £25	
	Number of Schools[2]			
Munster	160	10	16	186
Connacht	65	10	5	80
Ulster (3 counties)	10	14	4	28
Leinster (excluding Dublin) ..	67	30	10	107
Dublin (City and County) ..	30	31	40	101
TOTAL	332	95	75	502

[1] Excluding secondary tops and the 40 boarding schools which did not take day pupils.

[2] The fees of schools that did not reply to the questionnaires were estimated by the team from personal knowledge or from information received, or by reference to the type of school involved, using the returns as a basis.

10.5 Finally, as an indication of the accessibility of the schools, Table 10.4 shows the distance travelled to secondary school by day

TABLE 10.4

Secondary Schools, 1962/63, *Percentage Distribution of Day Pupils in each Province by Distance Travelled to School*

(Based on returns accounting for 75 per cent of all day pupils)

Province	Distance Travelled to School[1]			
	Under 5 miles	5–10 miles	Over 10 miles	TOTAL
	Percentage Distribution			
Munster	69·4	24·9	5·7	100·0
Connacht	66·1	27·5	6·4	100·0
Ulster (3 counties) ..	60·4	24·5	15·1	100·0
Leinster	79·8	17·2	3·0	100·0
TOTAL	73·5	21·5	5·0	100·0

[1] Single journey.

pupils. The city schools have been included in this table: it does not seem appropriate to exclude them as numbers of children from outlying rural areas attend city schools.

10.6 The table shows that an appreciable proportion of pupils attending secondary schools at present have to travel long distances to school, particularly in Ulster. This may be part of the reason for the low participation rates in some areas noticed in chapter 6. The mode of travel of day pupils is given in the following table which is also based on returns covering 75 per cent of day pupils. It will be seen for instance that on these estimates over 3,000 pupils travelled more than 10 miles to school, a further 13,000 travelled 5 to 10 miles and that 14,000 travelled by bus or train.

TABLE 10.5

Secondary Schools, 1962/63: *Percentage Distribution of Day Pupils by Distance Travelled to School and by Mode of Travel.*

(Based on returns accounting for 75 per cent of day pupils)

Distance travelled to school	Mode of Travel							Number of Day Pupils
	On Foot	Bicycle	Private Car	Public Bus or Train	Private Bus	Other Means	Total	
Miles	Percentage of all Day Pupils							Number
Under 5	26·8	32·4	3·2	10·8	0·3	—	73·5	45,925
5–10	0·1	11·5	2·3	6·6	0·9	0·1	21·5	13,435
Over 10	—	0·5	0·5	3·1	0·6	0·3	5·0	3,122
TOTAL ...	26·9	44·4	6·0	20·5	1·8	0·4	100·0	62,482
Number of Pupils[1]...	16,808	27,742	3,749	12,809	1,125	249	62,482[2]	

[1] Obtained by applying the percentage distribution to the total number of day pupils.

[2] Annual Report, 1962/63.

DISTRIBUTION OF TEACHERS

10.7 The distribution of teachers among these schools is similar to the pattern displayed by national school teachers, resulting in low pupil/teacher ratios in the smaller schools, though the range of variations is much smaller in the case of secondary schools. The details are illustrated in Table 10.6.

10.8 The large amount of detail regarding teachers requires some comment. Secondary schools engage both full-time and part-time teachers. Of the full-time group, the largest component consists of the

TABLE 10.6

Secondary Schools[1]*: Distribution of Teaching Resources by Size of School, 1963/64*

	Day[2] Schools: size of school					Boarding Schools[3]	Juniorate[4] (Boarding)	TOTAL
	Less than 100 pupils	100–149 pupils	150–199 pupils	200–299 pupils	300 pupils and over			
Total Number of Schools	176	138	81	79	53	18	24	569
Number of Pupils	11,689	16,537	13,767	19,338	2[illegible],063	3,012	1,502	87,948
	Number of Teachers							
Full-time Teachers:								
Incremental Teachers[5]	572	707	597	794	842	153	80	3,745
Other Registered Teachers	23	24	13	22	24	16	4	126
Probationary Teachers	81	44	37	64	43	9	8	286
Diploma Students	33	49	21	64	108	10	11	296
Other (Non-Registered)	89	112	89	119	63	30	27	529
Full-time Equivalent of total Teachers (full-time and part-time) ... ... (22 hours weekly = 1 full-time equivalent teacher) ...	861	1,021	792	1,058	1,063	231	123	5,149
	Ratios							
RATIOS:								
(a) Pupil/Incremental Teacher	20·5	23·5	23·2	24·4	26·4	19·7	18·8	23·6
(b) Pupil/Full-time Equivalent Teacher	13·6	16·3	17·5	18·3	20·9	13·0	12·2	17·2
(c) Incremental teachers as percentage of the quota[6]	81	75	79	79	77	95	85	79

Source: February Census, 1964.

[1] Excluding secondary tops.

[2] Including combined day/boarding schools.

[3] Not taking day pupils.

[4] Juniorates are secondary schools conducted by religious communities for aspirants to the religious life. They do not take day pupils.

[5] Registered teachers in receipt of state incremental salaries.

[6] The maximum number of registered teachers in respect of whom the Department will pay incremental salaries. The number is determined by the number of pupils in the school.

incremental teachers. These are registered teachers who are paid state incremental salaries in addition to a basic school salary. The other categories listed, though nominally full-time, in fact display substantial variations in the number of teaching hours. Thus probationary teachers (i.e. teachers in the first year of service) taught on average for about four-fifths of the average time taught by incremental teachers. Similarly, Diploma students (i.e. students for the Higher Diploma in Education) in aggregate teach for less than half the time of an incremental teacher. For this reason it was necessary to convert all teachers (both full-time and part-time) into full-time equivalents. This was done by taking 22 teaching hours weekly, the average for all incremental teachers, as being the equivalent of a full-time teacher.

10.9 It will be seen that the pupil/teacher ratio varies considerably as between school sizes. In the case of full-time equivalents, the ratio is over 50 per cent higher for the largest as compared with the smallest schools. In order to see how far this distribution may be the result of the Department of Education's regulations governing the numbers of teachers who may be recognised for salary purposes, the pupil/incremental teacher ratio is also shown. It is interesting to see that this ratio is only about thirty per cent greater for the largest as compared with the smallest schools. The last line in the table shows that schools do not employ their full quota of teachers (schools pay part of the teachers' salaries). It will be noted that the purely boarding schools are best equipped in this regard. Thus apart from the difference in the number of incremental teachers, it is the smaller schools who have the higher proportion of other categories of teachers. Hence it may be concluded that in terms of teaching resources used, smaller schools cost per pupil anything from one-third to one-half more than larger schools. This does not of itself imply that small schools are inefficient—as before, it would be necessary to know something about the educational benefits which the pupils receive.

10.10 A comment on the usefulness of data of the type contained in Table 10.6 relating to pupil/teacher ratios, may be relevant here. Very often it is desired to make comparisons betwen different school systems—between different countries for example. Such comparisons are often handicapped or invalidated by variations in the system. One such complicating factor is the extent to which there are variations in the numbers of teaching hours expected of teachers in different systems or countries. Accordingly, an alternative indicator of teacher utilisation may be used, namely the number of teaching hours provided per pupil. Table 10.7 shows the results obtained.

TABLE 10.7

Teaching Hours per Pupil per Week in Secondary Schools[1], 1963/64.

Size of School	Less than 100 pupils	100–149	150–199	200–299	300 pupils and over	All Schools
	Teaching hours per pupil per week					
Per Incremental Teachers ..	1·10	0·99	0·95	0·90	0·82	0·95
Per Full-time Equivalent Teachers ..	1·61	1·35	1·26	1·20	1·05	1·28

[1] Excluding secondary tops, 18 boarding schools which do not take day pupils and 24 religious juniorates.

Source: February Census, 1964.

THE QUALIFICATIONS OF TEACHERS

10.11 As well as the data on the allocation of teachers as between schools of various sizes, we examined the qualifications possessed by teachers of different subjects. In 1962 a questionnaire was circulated by the Department at the request of the Commission on Higher Education, to full-time teachers with university degrees. The response to this survey was incomplete—it covered 85 per cent of the full-time graduate teachers employed by the schools in that year. Although this survey did not account for part-time graduates, registered teachers with non-university qualifications or other non-graduate teachers, it was not considered feasible for us to make a separate survey. The completed questionnaires were made available to us and were analysed. The tables that follow show the results obtained from our analysis of the forms.

TABLE 10.8

Qualification of Sample[3] *of Full-time Graduate Teachers in Secondary Schools*, 1961/62 *by University Degree, by Sex*

	UNIVERSITY DEGREE				
	B.A.[1]	B.Comm.	B.Sc.	Other[2]	TOTAL
Male:					
Lay	715	36	67	23	841
Religious	663	3	77	36	779
Female:					
Lay	586	78	59	22	745
Religious	691	47	76	53	867
TOTAL ..	2,655	164	279	134	3,232
Percentage Distribution ..	82·2	5·1	8·6	4·1	100·0

Note: Master's degrees are included with the appropriate primary degree.

[1] Includes B.A. B.Comm.

[2] B.Mus., B.Agric. Sc., etc.

[3] The returns shown in the table accounted for approximately 85 per cent of all full-time teachers with a university degree.

TABLE 10.9

Number of Full-time Graduate Secondary Teachers in Sample[1] *who were in receipt of a Special Increment for Honours Qualifications,*[2] 1961/2

	University Degree				
	B.A.	B.Comm.	B.Sc.	Other	Total
Male:					
Lay	333	11	29	9	382
Religious	388	—	47	24	459
Female:					
Lay	275	30	21	9	335
Religious	395	42	46	8	491
Total ..	1,391	83	143	50	1,667

[1] 85 per cent. There were 3,232 teachers in the sample; the honours status of 315 of these was not ascertained.

[2] Honours degree or honours diploma.

10.12 From Table 10.9 it will be seen that just over half of the teachers accounted for in Table 10.8 had an honours qualification. This does not necessarily mean an honours degree; in a number of cases it would have been an honours Higher Diploma in Education. It was not possible from available data to identify this qualification precisely. In the case of 315 of the respondents we were unable in the time available to trace whether or not they had an honours qualification.

10.13 It is interesting to note that, if these results can be accepted as representative of the teaching force generally, religious in general have a higher proportion of honours qualifications than lay teachers.

10.14 Table 10.10 shows the distribution of teaching time by qualifications. It will be seen that an appreciable proportion of the teaching time in most subjects was provided by teachers who did not have the subject in their degree.[1] For instance only 44 per cent of the instruction in mathematics was given by teachers who had taken mathematics in their degree. Indeed in some subjects much of the instruction was given by teachers who had not taken the subject at university at all. History, geography and science were among the worst in this regard. The general picture as shown by Table 10.10 would of course be improved by the inclusion of part-time graduate teachers, but then it would be worsened by the inclusion of non-graduate teachers. It should be emphasised that this analysis in no

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[1] Many of the science teachers for example, would have passed the Department's qualifying examinations in science, the syllabuses for which are those of the Intermediate and Leaving Certificates.

TABLE 10.10

Percentage Distribution of Teaching Time in each Subject given by Full-Time Graduate Teachers[1]*, Classified by Qualificatory Status of Teacher,* 1961/62

Subject[2]	Total teaching time per week given by teachers in sample	Qualification of teacher in subject: Subject taken at University: In Final Degree examination	Qualification of teacher in subject: Subject taken at University: In First University examination	Qualification of teacher in subject: Subject not taken during degree course	TOTAL
	Hours ('000)	Percentage distribution of hours			
Irish	11·6	81	16	3	100
English	9·3	69	22	9	100
Latin	7·9	73	22	4	100
Greek	0·6	71	21	8	100
French	5·3	73	15	12	100
German	0·1	66	24	10	100
Italian	0·1	32	21	47	100
Spanish	0·1	57	43	0	100
Science	4·7	64	5	30	100
Mathematics ...	12·4	44	37	19	100
Applied Mathematics	0·1	79	13	8	100
History	6·2	53	15	32	100
Geography ...	4·9	21	31	48	100
Commerce ...	1·8	77	5	18	100
Agricultural Science	0·2	92	3	5	100
TOTAL ...	65·3	62·0	21·5	16·5	100

[1] Approximate 85 per cent sample.

[2] Excluding art, domestic science, etc.

way attempts to indicate the actual quality of teaching since this latter, among other things, would depend on the attributes of the individuals concerned. It is merely an indicator, using qualificatory status, of the degree of competence to teach possessed by the persons actually teaching each subject. If it is granted that teachers should preferably have a university qualification in the subjects they teach then it may reasonably be held that there is scope for improving this aspect of teaching. In quoting the first university examination we are following the form of the questionnaire supplied. We are not implying that a pass in that examination in, say, mathematics is necessarily of a higher standard than an honours in the leaving certificate examination: indeed the National University regulations for entry to engineering suggest the opposite.

10.15 In view of the data in Table 10.10 it would be desirable to analyse all teachers by subjects studied at university level. In the time available we were unable to do this for the teaching force generally; we did however, do it for science and mathematics. The results are in Table 10.11. It will be seen that only 311 (157 male,

TABLE 10.11

Sample[1] of Full-time Graduate Secondary Teachers by University Qualifications in Mathematics and Science, 1961/2 by Sex

(*a*) MALE

		Mathematics qualification			
		Taken for degree	Taken in first year only	Not taken at University	TOTAL
		Number of Teachers			
Science Qualification	Taken for Degree ...	90	48	19	157
	Taken in first year only	27	17	38	82
	Not taken at University	223	433	725	1,381
	TOTAL ...	340	498	782	1,620

(*b*) FEMALE

		Mathematics qualification			
		Taken for degree	Taken in first year only	Not taken at University	TOTAL
		Number of Teachers			
Science Qualification	Taken for degree ...	61	70	23	154
	Taken in first year only	4	10	27	41
	Not taken at University	175	415	827	1,417
	TOTAL ...	240	495	877	1,612

[1] 85 per cent.

154 female) had taken science in their degree and only 580 (340 male, 240 female) had taken mathematics in their degree: of these 151 (90 male, 61 female) were common to both categories. This means less than one science graduate per school and little more than one mathematics graduate per school, even allowing that we have not accounted for all teachers. If it were decided to restrict the teaching of science to graduates in the subjects, there would clearly not be sufficient teachers. A mathematics teacher would be wholly occupied in teaching four or five classes. If teachers who had studied the subjects in their first university year were allowed teach them, the supply position would be rather better, especially in mathematics. However, since all these teachers are fully employed[2] already, assigning them solely to science and mathematics could possibly have the

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[2] We have not analysed the teachers by subjects of degree by subjects taught.

effect of aggravating the 'shortage' of 'qualified' teachers in other subjects. In addition, however, there are several constraints on the mobility of teachers, which would make it impossible to redistribute the appropriate graduate teachers evenly over the schools. The main constraint is that teachers normally give instruction only to pupils of their own sex (in the case of some religious there may be express prohibitions). In addition, members of religious orders may in general move only between the schools conducted by their own order and in some cases this mobility is limited to one or two schools or to a diocese (nuns, including the two orders conducting most of the low and medium fee schools for girls are particularly affected in this way). The implications of this will emerge more clearly if the composition of the 580 graduates in mathematics is examined. They comprised 340 men and 240 women; 56 per cent of the men and 62 per cent of the women were religious.

10.16 If it is felt that teachers should have a formal university qualification in the subjects they teach, it would seem to be extremely desirable that detailed studies of the type described in the preceding paragraph be carried out to gauge the implications for the schools of introducing such a policy.

10.17 This brief discussion of the manner in which resources are distributed in secondary schools suggests some similarity with the results obtained in the previous chapter regarding national schools. It is the smaller schools which have lower pupil/teacher ratios and hence higher costs per pupil (the actual costs per pupil for each size of school were given in chapter 5, Table 5.6). With the secondary schools however, there may be significant quality aspects to be considered. Teachers are drawn from several sources, and they cover a wider range of subjects, as compared with national schools, hence there is the possibility of significant variations in the quality of teaching available in various schools. A full study of this area would need to take such factors into account.

BENEFITS

10.18 It is important to emphasise that what is shown in the following tables concerning the pattern of education provided by schools bears on only one aspect of the quality of education available to pupils i.e. the variety of subjects provided. We do not have any measure of the benefits derived by pupils from such education in the wider sense of the term.

10.19 The problem of presenting an adequate picture of the curricula provided by schools is rather complex. There appear to be two ways in which the data might be presented, firstly by defining various ' profiles ' (i.e. subject groups comprising a course) and then specifying the number of schools which provide each profile, and secondly by specifying individual subjects and detailing the number of schools providing each subject. Both methods have been attempted in the following analysis.

10.20 Table 10.12 shows the percentage of students studying each subject in the junior (intermediate) and senior (leaving certificate) cycles respectively. Table 10.13 is an estimate of the allocation of

TABLE 10.12

Percentage of Secondary School Students Studying each Subject, by Sex and by Cycle
1962/63

Cycle Subject	Boys		Girls	
	Intermediate	Leaving	Intermediate	Leaving
	Percentage taking the subject			
Irish Literature ..	83·6 }	99·3*	88·1 }	99·4*
Irish Language[1] ..	16·0 }*	—	11·7 }*	—
English Literature ..	97·1	99·7	97·1	100·0
English Language[1] ..	2·9	—	2·9	—
Greek	8·6	8·6	0	0
Latin	95·2	88·3	48·4	38·5
Hebrew	0·1	0·1	0·1	0·0
French	44·7	21·0	82·8	64·4
German	0·8	1·9	2·6	2·7
Italian	0·4	0·5	0·7	2·5
Spanish	2·1	3·2	1·1	3·6
History	100·0 }	64·3	100·0 }	73·1
Geography	100·0 }*	80·9	100·0 }*	89·6
Music	0·4	0·6	1·8	1·7
Art	7·9	1·8	27·0	18·2
Drawing	34·1	29·0	28·2	17·5
Mathematics	100·0*	99·3	83·4 }	82·3
Elementary Mathematics	—	—	16·5 }*	—
Commerce	23·6	22·0	28·4	13·9
Science (intermediate)..	74·0	—	25·3	—
Agricultural Science ..	2·4	4·0	0	0
Chemistry	—	31·7	—	4·8
Applied Mathematics ..	—	10·9	—	0·0
Physics	—	28·8	—	2·0
Physics and Chemistry[2]	—	7·2	—	4·7
General Science ..	—	5·2	—	4·7
Manual Training ..	1·2	—	0	0
Botany	—	2·2	—	8·6
Physiology and Hygiene	—	1·0	—	41·8
Domestic Science ..	—	—	69·9	60·3

[1] The 'language' course is an alternative to the 'literature' course.

[2] This line does not give the percentage who took both of the subjects 'physics' and 'chemistry'. Physics and chemistry' is a separate subject.

Source: Annual Report 1962/3.

*Essential subjects for recognised pupils.

Notation: In this table the symbol — means that the subject is not applicable at that level. The symbol 0·0 means that less than one half per cent took it and 0 means that nobody took it.

time between the various subjects. As regards the junior cycle, Table 10.12 shows that apart from the subjects which are essential for recognition (Irish, mathematics, history and geography) and English, which is taken by all, the commonest subjects for boys are Latin, which is taken by 95 per cent of them, science (74 per cent) and French (45 per cent). Of the girls in the junior cycle less than half take Latin but over 80 per cent take French; only 25 per cent of them take science but 70 per cent take domestic science. In the senior cycle although Irish is the only subject essential for recognition English and mathematics are taken by over 99 per cent of the boys while Latin is taken by 88 per cent of them, geography and history being the next most common. Mathematics is also taken by over 80 per cent of the senior girls, Latin is taken by only 39 per cent of them but 64 per cent of them take French as against 21 per cent of the senior boys. Geography is taken by 90 per cent of the girls and history by over 70 per cent. Very few senior girls take science other than physiology and hygiene or domestic science: chemistry is taken by about 30 per cent of the senior boys and physics is taken by about the same number: it is not possible, however, to deduce from Table 10.12 what proportion of pupils take either chemistry or physics or both. It is interesting that the proportion taking French drops off sharply in the senior cycle as also does the proportion of girls taking commerce, and similarly for art and drawing. Whether these are largely temporary phenomena, arising from an increased interest in those subjects in latter years, could be gauged from the corresponding tables for later years which can be readily derived from the annual reports as they are published. The differences between the proportions of boys and girls taking various subjects may owe something to the level to which subjects are taught. A school teaching a subject to honours level may feel it necessary to allocate more time to it than would a school providing it only to pass level. A special example of this would, of course, be mathematics. The data on availability of subjects and the ' profiles ' that follow, are intended to shed some light on this aspect of the matter.

10.21 Table 10.13 shows that nearly half of the pupil hours in secondary schools is devoted to languages. This is, of course, in keeping with the traditional concept of secondary grammar education. Modern continental languages play a small part, however. Only 218 boys obtained honours in any one of them at the leaving certificate examination, 1963. It is not our function to comment on the aptness of this allocation: the table does, however, make it easier to appreciate how difficult it is to provide for other subjects, such as science, art and music. These percentages do not take account of religious instruction or of extra-curricular activities.

TABLE 10.13

Estimated percentage distribution of Pupil Hours in Secondary Schools by subject, by sex and by cycle, 1962/63

Subject[1]		Languages				Science												
		Vernacular Languages[2]	Ancient Classics	Modern Continental Languages	Total	Physical Sciences	Life Sciences	Domestic Science	Total	Mathematics	Commerce	Music, Art and drawing	History	Geography	Manual Training	Other	Total	Estimated total pupil hours[3] for the school year, 1962/63
		Percentage Distribution of Pupil Hours																Pupil hours in millions
Junior	Boys ...	31·2	14·0	5·8	51·0	7·6	1·7	—	9·3	18·1	2·9	3·4	9·1	6·1	0·1	0·1	100	28·38
	Girls ...	30·9	5·8	12·1	48·8	2·0	1·0	9·3	12·3	15·9	3·4	4·6	9·0	6·0	—	—	100	28·10
Senior	Boys ...	31·2	13·2	3·2	47·6	9·5	1·4	—	10·9	18·6	2·7	2·6	7·8	9·8	—	—	100	10·28
	Girls ...	29·7	4·6	10·0	44·3	1·8	6·4	9·6	17·8	13·1	1·7	3·7	8·7	10·7	—	—	100	9·47

[1] Excluding formal religious instruction.
[2] Irish and English, slightly more than half being given to Irish.
[3] The aggregate of the hours spent in school by each individual student.

10.22 Tables 10.14-10.16 give data on the subjects provided in the various types of school. They are based on an analysis of the 1963 leaving certificate examination lists. In table 10.14 a school is listed under 'mathematics' if any pupil in that school obtained honours in mathematics: it is also listed under mathematics and science if honours were obtained in mathematics and in science, not necessarily by the same pupil. It will be seen that in only 47 schools in all were honours achieved in mathematics, science and a modern continental language. In the context of the need for exports and of our possible entry into the European Economic Community it is of interest to note that very few of the boys' schools achieved honours in a modern continental language—indeed the Annual Report for 1962/63 shows that the total number of boys obtaining honours was as follows: 165 in French, 6 in German, 1 in Italian and 6 in Spanish. To emphasise the scarcity of these subjects we note that no boy attending school in the City or County of Cork (Population 330,000) obtained honours in a modern continental language at the leaving certificate examination in 1963. The scarcity of honours in mathematics in the girls' schools is of course only too obvious. In fact only some 2 per cent of girls obtain honours in mathematics at the leaving certificate although at the intermediate certificate some 13 per cent do so. Finally Table 10.17 shows the number of schools from which candidates were entered in certain subjects at the intermediate certificate examination 1963.

TABLE 10.14

Number of Secondary Schools in which Honours were obtained in Certain Subjects at the Leaving Certificate Examination, 1963

Subjects[1]	Boys' Schools		Girls' Schools		Mixed Schools	
	Schools obtaining Honours	As percentage of Total (228)	Schools obtaining Honours	As percentage of Total (261)	Schools obtaining Honours	As percentage of Total (68)
	Number	Percentage	Number	Percentage	Number	Percentage
Mathematics	139	61·0	15	5·7	10	14·7
Mathematics and Science[2] ...	120	52·6	11	4·2	7	10·3
A modern continental language	41	18·0	124	47·5	17	25·0
Mathematics, Science and a modern continental language	34	14·9	8	3·1	5	7·4

[1] The subject groups are not mutually exclusive, e.g., the 139 under 'mathematics' (boys) includes the 120 under 'mathematics and science'. The final number in a column is included in each of the numbers above it.

[2] Other than Domestic Science or Physiology and Hygiene.

Note: The total number of schools was as follows:—boys' schools, 228; girls' schools, 261; mixed schools, 68.

10.23 Our evaluation, based as it is on one year's results, is biassed against the very small schools in as much as they might not have a student of honours ability every year. Again there may be factors extraneous to the school such as home environment. In spite of these reservations, however, Tables 10.14 to 10.17 do suggest that over the system as a whole the provision of subjects is closely linked to size and to fee levels. It is obviously expensive and difficult to provide a broad curriculum for small numbers of pupils, even if teachers with the required range of subjects can be obtained. We have seen that the majority of day pupils were charged in 1961/62 less than £15 per annum. It is not surprising then that schools should tend to a programme that will suit the majority of their pupils and that can be provided by a small staff. The most useful teacher for this purpose is likely to be an arts graduate, as he can usually take two or three subjects. Inevitably, therefore, the schools settle for a curriculum that, whatever its virtues or defects, will meet the examination needs of the pupils at an acceptable cost level.

SUMMARY

10.24 The secondary school system has some of the marks of a private system in that it has a large number of small units and is unevenly spread over the various regions. Regionally, Munster has the most schools per total population and the three Ulster counties have the least. We have already mentioned (Chapter 6) that the lay Catholic schools and the religious orders of brothers are most widespread in Munster.

10.25 The pupil/teacher ratios in day schools increase with size of school. The ratios are lowest of all in the juniorates, which are also small, and in the boarding schools—these last employ almost their full quota of incremental teachers. Teachers are not restricted as to the subjects they teach and a significant amount of instruction is given by teachers with no university qualification in the subject being taught. The majority of registered teachers are arts graduates. Other teachers may be unevenly distributed over the system owing to the limited mobility of religious; as a result there may be local shortages of certain types of teacher.

10.26 The curriculum in a great many schools is limited and is of a classical grammar school type. Small schools in particular, appear to have difficulty in providing a varied course. We have seen in chapter 5 (Table 5.6) that the cost per pupil is highest in the case of the small schools. If modern requirements should indicate a need for more flexibility in secondary education, such schools are likely to find themselves faced with difficulties of adaptation.

TABLE 10.15

Percentage of Secondary Schools, by Fee Level, in which Honours were obtained at the Leaving Certificate Examination, 1963.

Fee[1] Level	Estimated total number of schools[2]	Mathematics	Mathematics and Science	Modern Continental Language	Mathematics, Science and a modern continental language
		Percentages			
Up to £15 ...	356	26·8	22·3	21·2	3·7
£15 to £25 ...	107	30·8	25·2	44·9	11·2
Over £25 ...	95	37·8	33·7	62·1	23·2
TOTAL ...	557	29·5	24·8	32·7	8·5

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[1] Fees shown are day fees. The corresponding boarding fees are: up to £75, £75 to £100 and over £100.

[2] For the purpose of this table the fees of schools that did not reply to the questionaires were estimated by the team from personal knowledge or from information received and by reference to the type of school involved, using the returns as a basis,

TABLE 10.16

Percentage of Secondary Schools by Size and Showing Boys', Girls' and Mixed Schools separately, providing Certain Subjects and Subject Groups at Honours Level in the Leaving Certificate, 1962/63

	Mathematics			Mathematics and Science			Modern Continental Language			Mathematics Science and a modern continental language		
Type of school / Size of school	Boys	Girls	Mixed	Boys	Girls	Mixed	Boys	Girls	Mixed	Boys	Girls	Mixed
	Percentages											
0–99 pupils	24·1	1·2	9·8	17·7	1·2	5·9	6·3	17·9	11·8	1·3	1·2	2·0
100–149 ...	57·4	3·8	8·3	46·0	2·6	8·3	6·4	47·4	50·0	6·4	1·3	8·3
150–199 ...	76·7	11·1	66·6	70·0	6·7	33·3	23·3	77·5	100·0	20·0	4·4	33·3
200–299 ...	94·4	10·0	100·0	86·1	7·5	100·0	27·8	75·0	100·0	25·0	5·0	100·0
300 and over	100·0	14·3	100·0	94·4	14·3	100·0	41·7	78·6	100·0	41·7	14·3	100·0

TABLE 10.17

Number of Secondary Schools, by Sex, which presented Candidates for Certain Subjects in the Intermediate Certificate Examination, 1963

Subjects	Boys' Schools[1]	Girls' Schools[1]
Mathematics, full course ..	—[2]	214
Science or agricultural science[3] ..	217	132
Modern continental language ..	116	265
Commerce	114	157
Art and drawing	174	213

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[1] Total number of schools: boys, 228; girls, 261; mixed, 68. Mixed schools have been included under both boys and girls.

[2] All boys schools must provide the full course in mathematics.

[3] Excluding domestic science.

VOCATIONAL AND TECHNICAL EDUCATION

INTRODUCTION

10.27 In the session (or school-year) 1963/64 there were 308 schools providing vocational education, including 4 colleges and 4 other centres devoted exclusively to technical and commercial education, 3 schools of art and 3 schools of music. 49 schools were used exclusively for evening courses. Whole-time day continuation courses were provided in the remaining 245 schools; in addition these centres provided evening classes for adults and a number provided part-time day technical education for apprentices and others. Occasional courses, mainly adult education, were provided in a further 416 centres, (local halls, temporary huts etc.). These 'out-centres' are usually served from the nearest permanent school.

10.28 It will be recalled from the general account of the educational system in Chapter 1, that the distinctive feature of vocational education *vis-à-vis* the other branches of education is the administrative organisation. Unlike the national and secondary divisions, the unit of administration is not the school but rather the scheme (a city, urban or county area). By comparison with the other divisions, this means that there is a degree of flexibility in the allocation and utilisation of financial and teaching resources (and equipment, to a lesser extent). Financially, funds are provided from local and central government in accordance with a clearly defined procedure and the schools are not dependent on voluntary contributions (as in the case of the national schools) or on fees and other private sources of finance (as in the case of the secondary schools).

10.29 While an evaluation of the use of resources in vocational schools will follow the same general principles used in the case of national and secondary schools, it will clearly be complicated by the two facts that the individual school is not an autonomous unit and that it serves a diversity of educational needs. These latter range from the provision of continuation courses for post-primary students through the varied field of technical education to adult education and even some general community services of an advisory character. Broadly, however, the activities of the vocational schools fall into two, or perhaps three parts. These are continuation education for young persons moving on from the national school—this is junior cycle post-primary education—and technical education for apprentices and others in industry or preparing for employment. This is provided mainly at the second level with some third level courses in the colleges of technology. Adult education might perhaps be regarded as a third division, although it has a not inconsiderable technical and commercial content, which relates it closely to employment.

10.30 In point of size and consumption of resources, continuation education is the most significant activity of vocational schools.[3] For many of the smaller schools, technical education, if it exists in them, is very much a marginal activity. Adult education in the form of evening classes is of course, provided in most schools ; the justification for building some schools to their present size and in their existing locations is probably to be found in the fact that the building and the staff could be used for both day and evening work. We have, accordingly, limited our study almost exclusively to the continuation cycle.

10.31. In the short term, of course, technical education is more relevant to economic growth and development. Regrettably, we were unable to apply appropriate analytical methods to this sector : time and problems of data collection effectively prevented this. Although restricted in coverage, technical education in the range of its activities, entry requirements and outputs is a highly diversified and complex field. We did collect some information. Part of it will be mentioned here but we felt that most of it would be more appropriate to the discussions of participation and certificant outputs and so it will be found in chapters 6 and 8.

CONTINUATION EDUCATION

LOCATION OF SCHOOLS

10.32 As already noted in chapter 4 most of the 245 schools providing whole-time day continuation courses[4] were built since 1900, the great majority in fact since 1930. Their rate of development would appear to have been influenced largely by the general level of governmental subsidy on the supply side and the general rate of development of industry on the demand side. A variety of factors would appear to have operated to influence the specific location of schools. Among these are the availibility of alternative forms of post-primary education at a moderate fee, the regional development of industry, interest in adult education, especially for farmers in specific areas and finally the growth of popular demand associated with the development of voluntary community organisations. In particular it may be noted that vocational schools have been provided in a number of smaller centres where it might not have been economically feasible to establish secondary schools. In this connection also it should be said that certain factors which appear to effect the size of school in the case of secondary schools e.g., sex, religion, social class, do not affect the size of vocational schools. A vocational school is in general, open to cater for everybody in its area, irrespective of sex, religious, linguistic or social background.

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[3] 70 per cent of the teaching resources are devoted to this activity.

[4] Including a school of commerce and a college of catering and domestic science providing a course for small numbers. These institutions are not considered here in relation to their main functions as centres of technical and commercial training.

10.33 Table 10.18 shows the distribution of the schools by location and by enrolment size.

TABLE 10.18

Day Vocational Schools by Enrolment-size and Centrality

Centrality Size of School	Cities	Towns 5,000 and over	Towns 1,500–5,000	Towns 500–1,500	Villages 200–500	Rural	TOTAL
	Number of Schools						
0–99 students	3	2	15	46	25	28	119
100–149 "	1	3	31	16	6	3	60
150–199 "	6	4	11	5	—	—	26
200–299 "	11	14	4	3	—	—	32
300 and over	5	3	—	—	—	—	8
TOTAL ...	26	26	61	70	31	31	245

Source: February Census, 1964.

10.34 On 1 February, 1964 there were 28,969 students in attendance at whole-time day continuation courses, as shown in Table 10.19. It may be mentioned in passing that there are substantially more boys than girls in the schools, 16,280 against 12,689 and this is true irrespective of the location of schools.

TABLE 10.19

Continuation Students in Vocational Schools on 1 February, 1964 by School Size and Centrality

Centrality Size of School	Cities	Towns 5,000+	Towns 1,500–5,000	Towns 500–1,500	Villages 200–500	Rural	TOTAL
	Number of Students						
0–99 students ...	177	152	1,084	3,028	1,349	1,291	7,081
100–149 " ...	128	385	3,883	1,768	663	321	7,148
150–199 " ...	953	713	1,846	821	—	—	4,333
200–299 " ...	3,053	3,248	876	639	—	—	7,816
300 and over ...	1,658	933	—	—	—	—	2,591
TOTAL ...	5,969	5,431	7,689	6,256	2,012	1,612	28,969

Source: February Census, 1964.

10.35 Over the whole country nearly half of the schools had enrolments of less than 100 pupils (Table 10.18). These schools were attended by just one quarter of the students (Table 10.19). The provincial variations, however, may be of interest. In the table that follows the four borough and seven urban schemes have been excluded.

TABLE 10.20

Continuation Courses—Schools with Less than 100 Students as Percentage of Schools in Each Province, and Students as Percentage of All Students, 1963/64

Province	Schools of less than 100 Pupils: As Percentage of Schools in Province	Schools of less than 100 Pupils: Students in those schools as Percentage of Students in Province
	Percentages	
Connacht	63	48
Ulster (3 counties) ..	54	33
Munster	62	37
Leinster	56	30

Source: February Census, 1964.

It will be seen that Connacht has the highest incidence of small schools, which is in keeping with the lower population density of that region.[5] The inclusion of the county borough and urban schemes would not affect Ulster; it would affect the figures for Connacht somewhat and would have a marked affect on the figures for Munster and Leinster.

10.36 As regards the accessibility of the schools, an enquiry made by the team in February, 1964 gave the following results:

TABLE 10.21

Percentage Distribution of Day Continuation Students by Distance Travelled to School, 1963/64

Province	Distance Travelled to School[1]: Less than 5 miles	Distance Travelled to School[1]: 5 to 10 miles	Distance Travelled to School[1]: Over 10 miles	Total
	Percentage Distribution			
Connacht	51·3	41·3	7·4	100
Ulster (3 counties) ...	39·0	46·0	15·0	100
Munster	59·7	32·7	7·6	100
Leinster	70·1	27·2	2·7	100
TOTAL ...	61·3	32·5	6·2	100

[1] Single journey.

Source: Information supplied by vocational education committees.

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[5] Statistical Abstract, 1964, Table 1.

10.37 Table 10.21 shows that in Ulster the majority of continuation students have to travel long distances to school. There seems to have been some tendency to concentrate on the larger population centres and to assist students from outlying areas to meet transport costs.[6] Co. Donegal, for example, has both the largest number and the largest proportion of students travelling more than ten miles to school. In Connacht, with a rather small population and relatively few large centres, an effort has been made to meet the vocational education needs by providing a large number of small schools but almost half of the students travel over 5 miles. While most of the Munster students travel less than 5 miles there is still an appreciable proportion who travel more than 10 miles. The percentage of travel in Leinster is low—Dublin being included here. The total number of students who travelled more than 10 miles to school was 1,800; a further 9,400 travelled 5 to 10 miles. The pattern of travel (on foot, by bicycle etc.) is very much the same as for secondary pupils, except that the percentage travelling by private car is rather smaller.

10.38 Reference has been made to assistance with travelling expenses. This is done by way of 'travel scholarships'. Schemes were operated in 15 counties in the session 1962/63, covering 1,692[7] students at a total cost of £12,446. The provision of the transport is not arranged by the committees. Public transport is used where available, otherwise it is a matter for arrangement by the local community.

Distribution of Teaching Resources

10.39 As indicated above the pattern of resource utilisation is rather more complex than in national schools due to the fact that there are several different groups of students to be catered for. For this reason total teaching hours for each group have been used as the basic measure of input. In the case of whole-time continuation courses total teaching hours can be translated into full-time equivalent teachers and a pupil/teacher ratio derived.[8] At this stage it may be commented that while in the case of continuation pupils no problem arises in defining a pupil/teacher ratio, since the pupils are following a whole-time course, it is very difficult to define a meaningful ratio where the pupils are following part-time courses. One possibility, sometimes used, is to take a quota of attendance hours to represent a full-time pupil; this is not satisfactory as it fails to distinguish between two factors which should be kept quite separate in any analytical work, (i) attendance ratio and (ii) the ratio of teaching hours to pupil enrolment hours. Even if pupil enrolment hours were available, however, it is rather artificial (in the sense of providing an adequate basis for international comparisons) to translate them into full-time equivalent pupils by use of an arbitrary quota. For this Report, therefore, we have simply provided the basic data in the case of part-time students.

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[6] See Table 2, Appendix X.B for details of the number of travel scholarships in each county.

[7] 15.5 per cent. of all students who travel more than 5 miles to a school.

[8] The same concept as was used in the discussion on secondary schools. For vocational teachers it assumes an average of 900 hours per annum by whole-time teachers on continuation courses. The derivation of this average is discussed in Appendix IV.C.

10.40 Table 10.22 shows the average weekly teaching hours per student. The student/full-time equivalent teacher ratios are in Table 10.23.

TABLE 10.22

Average Weekly Teaching Hours per Student on Day Continuation Courses by Enrolment Size and Centrality (Location) of Schools, 1963/64

(*a*) E-SIZE (NUMBER OF PUPILS)

0–99	100–149	150–199	200–299	300 and over	All sizes
1·56	1·41	1·18	1·22	1·20	1·33

(*b*) CENTRALITY

Cities	Towns 5,000+	Towns and Villages 1,500–5,000	Villages 500–1,500	Villages 200–500	Rural	All Areas
1·25	1·22	1·41	1·33	1·41	1·53	1·33

Source: February Census, 1964.

TABLE 10.23

Student/Teacher Ratios (Full-time Equivalent Teachers) on Continuation Courses, by Enrolment Size and Centrality of Schools, 1963/64

(*a*) E-SIZE (NUMBER OF PUPILS)

0–99	100–149	150–199	200–299	300 and over	All sizes
16·6	17·7	21·2	20·5	20·8	18·5

(*b*) CENTRALITY

Cities	Towns 5,000+	Towns and Villages 1,500–5,000	Villages 500–1,500	Villages 200–500	Rural	All Areas
20·1	20·5	17·8	18·7	17·8	16·4	18·5

Source: February Census, 1964.

10.41 Given that the average number of teaching hours per week is approximately 25 per whole-time teacher and that the average number of student hours is around 28, it is possible with the average teaching hours per student to estimate the distribution of student/teacher ratios. This was done on the 1963 February census and showed that two-thirds of the schools had ratios of less than 20. For the small schools, with enrolments of less than a hundred, the proportion was just over three-quarters. A detailed table will be found in the appendix.

10.42 In the vocational, in contrast to the national and secondary school divisions, there is a relative absence of regulatory procedures, e.g. quotas, which might modify the student/teacher ratio. Within each scheme the sole criterion for the employment of teachers is that it must be possible to employ them fully. In the case of a whole-time teacher this means providing an average of 900 hours teaching per year. These hours may be aggregated by the teacher teaching on more than one type of course (e.g. continuation and evening classes) and in more than one school within the administrative area. For these reasons we examined the student/teacher (full-time equivalent) ratio by scheme. The relevant table and also tables showing the distribution of schools and students by size within each scheme, are given in the appendix. On the whole, the differences revealed by this table correspond to variations in the size of schools and distribution of pupils within schemes. Generally the more students are concentrated into larger schools the higher will be the student/teacher ratio for the scheme. However, this is blurred in schemes with a large number of small schools (0-99), demonstrating that no matter how efficiently a scheme may be organised, there is an irreducible minimum of teaching services, which must be provided even in the smallest school if the students are to receive instruction in the full course.

10.43 The ratios in the cities,* especially Dublin, seem to call for comment. For some years there has been an unsatisfied demand and severe pressure on capacity in these schemes; one would expect to find rather higher ratios than in fact obtain. There may be a number of explanations for this phenomenon but the one that suggests itself is that the city schemes use relatively more teaching resources than the counties. Since the cities provide a much wider range of technical and evening courses than the other areas, this apparent generosity in the case of continuation courses may be the result simply of the need to allocate aggregate hours in such a way as to ensure that there is economic employment for all the teachers required to operate the overall scheme.

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*Cork 22·0, Dublin 21·1, Limerick 21·2, Waterford 19·2.

TABLE 10.24

Qualifications of Whole-time Vocational Teachers by Category (September 1964)

Qualifications / Category	University Graduates						Others					
	B.A.[1]	B.Comm.	B.Sc.	B.Agr.Sc.	B.E.	Other[2]	Department Trained	Domestic Science Diploma	Professional[3] Qualifications	Other Special Qualifications[4]	Other	TOTAL
Woodwork and Building	—	—	—	—	—	—	373	—	—	—	3	376
Art	—	—	—	—	—	—	—	—	—	42	—	42
Science	—	—	85	2	—	—	1	—	—	1	6	95
Irish and General[5] ...	131	39	1	—	—	3	93	—	—	14	10	291
Metalwork and Engineering	—	—	—	—	13	2	200	—	3	1	6	225
Domestic Science ...	—	—	—	—	—	—	—	221	—	—	—	221
Commerce...	14	295	—	—	—	—	3	—	4	7	7	330
Rural Science	—	—	—	75	—	—	73	—	—	—	2	150
Physical Education ...	—	—	—	—	—	—	—	—	—	4	9[6]	13
Music, Drawing, Elocution	3	—	—	—	—	10	—	—	—	22	2	37
Radio and Communications	—	—	1	—	1	—	—	—	4	9	1	16
Electrical Engineering ...	—	—	—	—	5	—	—	—	3	1	—	9
Trades	—	4	—	—	—	—	23	—	1	38	9	75
Others[7]	—	—	2	1	1	5	1	—	3	1	1	15
TOTALS... ...	148	338	89	78	20	20	767	221	18	140	56	1,895

[1] Includes B.A., B.Comm. In other cases of multiple degrees teachers have been allocated to the degree most appropriate to their type, e.g., B.E., B.Sc. may appear under B.E. or B.Sc. depending on whether he is a teacher of engineering or science.

[2] Includes post-graduate degrees. [3] Mainly engineering and accountancy, e.g. A.M.I. Mech.E., A.M.I.E.E., A.A.C.C.A., M.I.C.W.A., A.R.I.B.A., A.R.I.A.I.

[4] Art Teacher's Certificate, Diploma in Physical Education, City and Guilds of London Institute, Royal Society of Arts, etc.

[5] Includes 20 teachers of modern languages. [6] Mainly certificates from Loughborough College, England. A few had army qualifications.

[7] Includes 8 teachers of Architecture, 2 teachers employed as educational psychologists and 2 acting as scheme organisers in Irish and rural science respectively.

NOTE : 'Category' refers to the category in which the teacher was appointed. It does not necessarily reflect the subjects actually being taught by the teacher.

QUALITY OF TEACHING

10.44 While it is not for us to evaluate the quality of the teaching in the schools in the broad sense, we may refer to two factors, (i) the qualifications and training of each category of teacher (ii) the extent to which each teacher can be allocated to the subjects which he/she is most competent to teach, given the exigencies of the syllabus, especially in the smaller schools. Data on the first factor are available from central records and are shown in Table 10.24.

10.45 In addition to the teachers of music, architecture, radio and communications, electrical engineering, trades and the eight miscellaneous teachers, there were a number of others in the table who do not teach continuation courses. These include 14 commerce, 20 engineering and 14 teachers of mathematics and science. There were also 54 teachers of building construction (included with ' woodwork ') who gave very little of their time to continuation classes.

10.46 The next table shows the percentage of graduates with honours degrees.

TABLE 10.25

Whole-time Vocational Teachers—Percentage of Graduate Teachers with Honours Degrees, September, 1964

Degree	B.A.	B.Comm.	B.Sc.	B.Ag.Sc.	B.E.	Other	TOTAL
Percentage with honours ..	39	33	21	10	35	30	29

10.47 The small proportion of science (and rural science) graduates with honours degrees will be noted. At the time this enquiry was made—(September, 1964) only one of the honours graduates in science was employed outside a city scheme, as far as could be seen.

10.48 There were in addition 269 teachers with other honours qualifications. These included honours in the Higher Diploma in Education (16), Domestic Science Diploma (2), Art Teachers' Certificate or Diplomas (12) and Departmental qualifications in Woodwork, Metalwork and Irish.

10.49 As regards qualifications in the theory and practice of education our enquiries showed that rather more than half of all graduate whole-time teachers had the Higher Diploma in Education, although it is not required for appointment as a vocational teacher.

All Department-trained teachers and all teachers of art, domestic science and physical education receive formal instruction in teaching theory and practice during their course of training. All teachers of Irish must obtain a Departmental qualification to teach the language, by attending a four week summer course. Similarly all rural science graduates who wish to become whole-time teachers must attend a fortnight's course in teaching methods. We have no information on the number of part-time teachers who hold such qualifications.

10.50 As regards continuation education, part-time teaching is not very significant outside the cities and a few other areas. Over the entire system it accounted for 11.3 per cent of all teaching hours in 1962/63, (details for each scheme are given in the Appendix). Where the percentage of part-time hours was significant it would seem to have been due to the employment of qualified married women to overcome local shortages of teachers of domestic science and commerce.

10.51 As regards the extent to which teachers can be allocated to the subjects they are most competent academically to handle, it was not possible to investigate this directly. In the time available it was possible only to make a comparison of the distribution of aggregate teaching hours for each of the main categories of teacher with the distribution of aggregate student attendance hours per subject. A serious defect in this approach is that no allowance could be made for the effects of dividing or amalgamating classes for particular subjects. While our data on teaching hours were adequate, the distribution of student attendance hours had to be done roughly. It was based mainly on our study of the pattern of education provided in the various schools. Nevertheless some indications emerge which, taken with other available information, would enable some conclusions to be drawn.

10.52 These conclusions as to the competence of teachers in particular subjects must of course be extremely tentative in the absence of any information in the case of graduates as to their degree subjects, or on the extent to which a Department-trained teacher is to be regarded as competent to teach a subject taken only as a subsidiary subject in his course of training. It would appear for example, that the provision of mathematics on the present scale is possible only because the subject is widely taught by metalwork (and sometimes woodwork) teachers. A similar situation obtains in regard to the teaching of general physics or chemistry by say, rural science teachers.

10.53 Bearing these points in mind we can say that our inquiry seems to show that woodwork, metalwork and rural science teachers generally teach certain other subjects in which their level of qualification is not immediately self-evident, namely mathematics, science and magnetism and electricity. Indeed this could have been inferred from an examination of the composition of the teaching force; there just are not sufficient graduate teachers of mathematics and science or engineering to sustain the level of activity in these subjects. In addition rural science and to a lesser extent domestic science teachers in some areas, appear to take general subjects such as English and arithmetic.

PATTERN OF CURRICULA

10.54 Turning to the benefits aspect of the question and again using curricula as the indicator, one finds that the pattern of courses provided in the continuation cycle is rather more independent of school size than in the case of secondary schools. In part this is because in establishing such schools provision is made for courses in specified subjects, to be given either by resident or itinerant teachers. In some cases in the smaller centres the number of students enrolled can lead as we have seen to rather generous and hence rather expensive student/teacher ratios. Nevertheless there are variations in the courses offered, as will be shown in what follows.

10.55 Approximately twenty subjects are provided for in the state examination, the Day Vocational Group Certificate. In addition, some schools may provide other subjects, including a modern continental language. Partly because of the examination requirements, there is a core of subjects that will be offered in all, or virtually all schools, irrespective of size and location. This core consists of Irish, English, woodwork, domestic economy, typewriting, mechanical drawing, commercial arithmetic and commerce. We accordingly examined the extent to which the other subjects are taken, viz. metalwork, shorthand, mathematics, rural science, magnetism and electricity, other science subjects (mainly mechanics and heat), commercial geography, art and continental languages. The results are set out in Table 10.26. The details are contained in the Appendix.

10.56 From Table 10.26 it is evident that the range of subjects taken is dependent very much on the size of schools. The percentage of the smallest schools having any of the subjects listed (except rural science, which is a special case) is in almost all cases lower than that for any other size. It will be noted also that certain subjects are taken in rather small numbers of schools; in particular magnetism and electricity, other science subjects and art. On the other

TABLE 10.26

Vocational Schools—Day Continuation Courses, Percentage of Schools of Each Size in which Various Subjects were taken, 1962/63

Subject	Size of Schools (Number of Pupils)					TOTAL
	0–99	100–149	150–199	200–299	300 and over	
	Percentages					
Metalwork	21·5	82·0	80·8	100·0	60·0	50·8
Mathematics ..	83·8	98·0	92·3	100·0	100·0	90·0
Magnetism and Electricity ..	16·6	54·0	30·8	51·7	60·0	27·1
Rural Science ..	55·4	98·0	42·3	20·7	20·0	57·5
Other Science Subjects	27·7	66·0	53·8	93·1	100·0	47·9
Shorthand	51·5	100·0	80·8	93·1	100·0	71·3
Commercial Geography ..	21·5	32·0	19·2	34·5	60·0	25·8
Art	18·5	26·0	46·2	89·7	100·0	33·3
Modern Continental language ..	16·6	16·0	19·2	41·4	40·0	16·2
Total Number of Schools ..	130	50	26	29	5	240[1]

[1] Timetables for 2 schools could not be traced.

hand it is interesting to see that modern continental languages (generally French), although only introduced in the past four years or so, have been introduced even in some of the smallest schools. While only about half of the smallest schools provided rural science almost all in the next size of school (100-149) included it.

10.57 It is a more difficult matter to determine how many students actually receive instruction in the various subjects. In some schools subjects are provided for one year only or for either boys or girls. However, the examination of time-tables, on which all this work was based, did give us a strong impression that in most schools students can exercise little or no choice of subjects. We can accordingly, take the numbers of students enrolled in the schools as indicating the numbers, who could have had an opportunity of receiving instruction in the various subjects. Table 10.27 summarises the position; details by school size and centrality are given in the Appendix.

TABLE 10.27

Vocational Schools—Day Continuation Courses

Maximum Numbers of Students who had the Opportunity of Receiving Instruction in Certain Subjects, 1962/63

	Boys		Girls		TOTAL
Subject	Number	As Percentage of Total Boys (15,200)	Number	As Percentage of Total Girls (11,660)	Percentage of total students (26,860)
Metalwork ..	11,145	73·3	—	—	—
Mathematics ..	14,763	97·1	352	3·0	56·3
Magnetism and Electricity ..	6,304	41·5	—	—	—
Rural Science ..	6,746	44·4	696	6·0	(*a*)
Other Science Subjects	9,343	61·5	1,972	16·9	62·1
Shorthand ..	703	4·6	10,518	90·2	(*a*)
Commercial Geography.	3,435	22·6	3,373	28·9	25·4
Art	5,849	38·5	4,549	39·0	38·7
Modern Continental languages	1,287	8·5	2,261	19·4	13·2

Note; The symbol— denotes zero.

(*a*) Not applicable or meaningful.

10.58 Before leaving this subject it must be repeated that the purpose of these tables is to illustrate the variations in the provision of courses. They show only the numbers of students in schools providing certain subjects, they do not purport to show the numbers who actually studied those subjects. Another indicator of this latter point is the numbers entering for the subjects in the day group certificate examinations in 1963. These entries are made in the month of February each year and since the statistics in Table 10.27 are taken from the 'February Census', the two are directly comparable. It should be borne in mind, however, that the numbers entering for examination is less than a third of the total student body. The heavy 'attrition' from continuation courses has been noted in chapter 6. Even on this basis and allowing that several subjects are optional in the examination, it seems to be fairly clear that the numbers taking the subjects in the schools are less than the totals on the rolls (details are given in the Appendix). This may be a result of 'streaming' according to aptitudes or it may be taken as a concentration on the essential 'core' subjects for the examinations.

UNIT COSTS

10.59 The financial costs attaching to the provision of continuation courses are discussed in paragraph 10.65.

TECHNICAL AND APPRENTICE EDUCATION

10.60 The distribution of teaching activity in vocational schools is given in Table 10.28 (and illustrated by the accompanying chart). Continuation education has been discussed above. It is not proposed to discuss evening courses. The trends we discussed in Chapter 3 may lead to important changes in evening courses.

10.61 One comment, however, can be made arising out of Table 10.28. Over the whole country evening courses absorbed only 14 per cent of the teaching resources of vocational education. Even in Dublin City, the most highly developed scheme, the resources employed on evening courses are less than a quarter of the total. The significance of these figures lies mainly in the field of financial costs and we shall have occasion to refer to them again under that head.

TABLE 10.28

Vocational Schools—Percentage Distribution of Teaching Hours by Type of Course, 1962/63

Type of Course	All areas	County Boroughs (including Dublin)	Dublin City	Scheduled Urban Areas	Counties
	Percentage Distribution				
DAY					
Continuation ..	69·6	45·4	44·9	76·5	79·8
Whole-time Technical	4·6	11·7	13·1	—	1·9
Apprentice ..	4·2	9·4	11·7	2·4	1·9
Part-time Technical	2·5	8·1	7·8	0·8	0·2
Part V[1]	0·8	2·8	—	—	—
Other	1·6	0·9	0·6	3·2	1·8
TOTAL Day ..	83·3	78·3	78·1	82·9	85·6
EVENING					
Apprentice ..	1·8	4·6	5·3	2·7	0·4
Technical and Commercial	8·4	11·4	13·9	6·7	7·2
Technological and Professional	0·8	2·5	2·5	0·3	0·1
Other	2·9	3·2	0·2	7·3	2·4
TOTAL Evening ..	13·9	21·7	21·9	17·0	10·1
Community Services	2·8	—	—	0·1	4·3
TOTAL ..	100·0	100·0	100·0	100·0	100·0

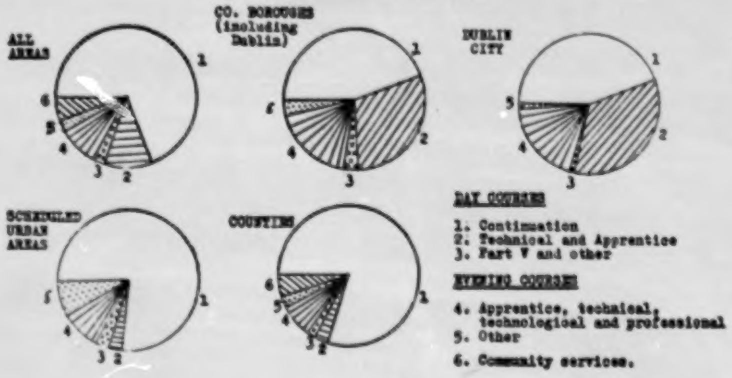
[1] Compulsory continuation classes under Part V of the Vocational Education Act, 1930. Students attend one day per week until they reach the age of 15 years. This part of the Act operates in the County Boroughs of Cork, Limerick and Waterford.

Source: Information supplied by vocational education committees.

CHART 10.1

VOCATIONAL SCHOOLS

TEACHING ACTIVITY, 1962/63



10.62 We see from the table that day courses, other than continuation, absorbed 13.7 per cent of teaching time in 1962/63 of which 11.3 per cent can be ascribed to technical and apprentice education. The corresponding percentages are of course considerably higher in the cities, as might be expected. Whole-time technical education is almost entirely confined to the cities; in 1963/64 out of a total of 1,607 students attending such courses 1,383 were enrolled in the four colleges in Dublin and the technical institutes in Cork and Limerick. Of these 594 students were attending third level courses. A further 295 students were attending full-time part-sessional technical courses, 207 at third level.

10.63 Table 10.29 shows the distribution of students attending part-time apprentice and other day courses. In the case of apprentices only 'day release' courses are included; a number also attend 'block-release' courses. It is clear that part-time education of any description is almost entirely confined to the cities and to towns over 1,500 population.

10.64 Because of the diversity of courses it is obviously impossible to evaluate the use of resources in technical education in the way we attempted for continuation courses. Given the variety of courses and the small numbers of students involved, one does not expect to obtain as high a return on the resources of teachers and equipment employed, as might be obtained in different circumstances. In many cases the nature of the courses calls for small student/teacher ratios. For instance, the third level courses, extremely small in aggregate, call for specialist teaching skills and university-type ratios. We must here refer to the colleges of technology. The position at present is that to a greater or lesser extent technical education (excluding apprentice training) at second or third level is being provided on a whole-time day basis in Dublin, Cork and Limerick. Only in Dublin (and there in two of the colleges) has the position been reached that continuation courses have been excluded from the technical colleges; the two Dublin colleges seem to be developing to a point when apprentice courses will also be excluded and they will thus become purely colleges of technology in the sense in which the term is used abroad.

TABLE 10.29

Number of Students attending Part-time Day Courses on 1 February, 1964 by Centrality

Centrality / Course	Cities[1]	Towns 5,000 and over	Towns 1,500-5,000	Towns 500-1,500	Villages 200-500	Rural
Apprentice Courses			Number of Students			
Male	1,415	742	293	67	—	—
Female ..	238	3	—	—	—	—
TOTAL ..	1,653	745	293	67	—	—
Part-time Vocational						
Male	110	162	99	93	74	—
Female ..	278	4	15	—	10	—
TOTAL ..	388	166	114	93	84	—
Part-time adult Education						
Male	49	20	65	60	56	15
Female ..	476	19	25	42	40	—
TOTAL ..	525	39	90	102	96	15

[1] The four county boroughs (Dublin, Cork, Limerick, Waterford).

Source: February Census, 1964.

UNIT COSTS IN VOCATIONAL EDUCATION

10.65 Data on costs for vocational education were not readily available to us, since the various committees do not analyse their expenditure by the type of course provided. Accordingly, it was necessary to collect data on this topic (details are given in Appendix V.D). The results for continuation courses may be summarised as follows:—

TABLE 10.30

Estimated Cost per Student in Continuation Courses, 1962/63

	All Schools	Dublin City	Counties
		£	
Teaching Costs per student ..	45·5	47·6	45·2
Other Costs per student[1] ..	25·2	36·3	25·1
Total Costs per student[1] ..	70·7	83·9	70·3

[1] Includes interest payments and repayments of capital.

Source: Information supplied by vocational education committees.

The chief characteristic of these figures is that non-teaching costs are much more significant for vocational than for either national or secondary schools. In part this may be due to the manner in which non-teaching expenditure was allocated as between the various types of course provided by vocational schools (see Appendix). The data for Dublin City and for the counties are shown since they are consistent with the suggestion made in paragraph 10.43 that the provision of teaching services is somewhat more generous in Dublin than elsewhere. Data on student costs for each size of school were not asked for owing to the great deal of time involved. While it might be expected that they would be in line with the general tendency for smaller schools generally to have the higher costs, the differences might not be so great in the case of vocational schools on account of the considerably higher other current costs in the city as compared with the county schemes.

10.66 Tables 10.31 and 10.32 show the estimated (i) cost of instruction per teaching hour and per student for each main type of course (including continuation) and (ii) the estimated aggregate current cost (including instruction, maintenance, administration etc.) per teaching hour and per student. The cost of continuation courses has been commented on. As regards the other courses, in comparing the cost per student on evening courses with the cost for other courses, the cost per student is relatively high given the rather short period of attendance of the average evening student (about 50 hours in the session).[10] The same observation applies to part-time day courses, including apprentice courses.

10.67 Probably the most significant figures in the tables are those relating to day technical courses, in particular the extremely high cost

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[10] The allocation of costs as between specific types of evening courses may not be altogether reliable but we felt that the aggregate cost per student was not sufficiently meaningful.

TABLE 10.31

Vocational Schools: Estimated Cost of Instruction per Teacher and per Student by Area and by Type of Course, Session 1961/63

(a) Estimated cost per teaching hour (in shillings)

Type of Course / Area	Day Courses						Evening Courses				Community Services
	Continuation	Whole-time Technical	Apprentice	Part-time Technical	Part V	Other	Apprentice	Technical and Commercial	Professional and Technological	Other	
	Cost in Shillings										
All Areas ...	19·0	23·4	20·4	20·4	19·9	17·6	17·5	18·2	27·4	17·2	17·7
Counties ...	18·7	19·4	12·0	16·6	—	15·7	18·6	17·7	16·8	17·6	17·7
Dublin City ...	19·6	33·6	29·0	31·6	—	23·6	16·6	19·4	31·8	34·0[1]	—

[1] Based on very small numbers.

(b) Estimated Instruction cost per student (in £'s)

Type of Course / Area	Day Courses				All Evening Courses
	Continuation	Whole-time Technical	Apprentice	Part-time Technical and Other	
	Cost (£)				
All Areas	45·5	80·9	19·1	10·9	4·1
Counties	45·2	47·0	15·4	7·8	3·7
Dublin City	47·6	112·9	24·9	23·9	4·7

Source: Information supplied by vocational education committees.

TABLE 10.32

Vocational Schools: Estimated Total Current Cost[1] per Teaching Hour and per Student by Area and by Type of Course (Teaching and other Current Costs[1] Combined)

(a) Estimated cost per teaching hour (in shillings)

Type of Course / Area	DAY COURSES						EVENING COURSES				Community Services
	Continuation	Whole-time Technical	Apprentice	Part-time Technical	Part V	Other	Apprentice	Technical and Commercial	Professional and Technological	Other	
	Cost in Shillings										
All Areas ...	29·8	46·9	40·3	40·2	33·8	25·1	28·6	27·9	42·0	26·4	27·1
Counties ...	28·8	28·6	18·1	25·1	—	23·7	28·1	26·8	25·2	26·6	26·8
Dublin City ...	34·8	58·3	52·5	54·3	—	28·6	39·5	34·1	54·5	49·8	—

(b) Estimated cost per student (in £'s)

Type of Course / Area	DAY COURSES				All Evening Courses
	Continuation	Whole-time Technical	Apprentice	Part-time Technical and Other	
	Cost (£)				
All Areas	70·7	131·1	31·2	17·8	6·3
Counties	70·3	71·1	23·3	11·9	5·6
Dublin City	82·9	182·3	44·5	41·0	8·6

[1] Includes interest payments and repayments of capital.

Source: Information supplied by vocational education committees.

relatively of wholetime technical education in Dublin. It is possible that the presence of third level courses may have inflated the costs somewhat, but it does suggest that the expansion of day technical education throughout the country may prove to be quite expensive.

10.68 At present about 70 per cent of all current expenditure on vocational education can be ascribed to continuation courses.[11] Technical education of all kinds accounts for 17 per cent and all evening courses for 13 per cent. On the basis of our projections in chapter 3, it would seem that by 1970/71 the proportions for both continuation and evening courses will fall and that for technical education will rise. Continuation courses will then account for only 64 per cent of expenditure, evening courses for 10 per cent and all forms of day technical education for 26 per cent. This may hold interesting implications in regard to methods of financing.

SUMMARY OF VOCATIONAL EDUCATION

10.69 Low population density, and in some areas competition with secondary schools, has resulted in the establishment of a large number of small schools. The organisational structure has the effect of alleviating the problems of efficient use of resources traditionally associated with small units, but it cannot overcome them completely. More importantly, perhaps, the provision of certain facilities, both of equipment and teaching services, is limited by the size of schools (an obvious example is metalwork). The range of subjects available to students in the smaller, mainly rural schools is thereby restricted.[12] Connacht is particularly affected in this way because of the large percentage of students involved.

10.70 Outside the large centres of population, continuation education seems to have been organised around a small core of specialist teachers, viz. woodwork, rural science, domestic science, Irish and general subjects. To these the commerce teachers have been gradually added. While there have been, and are teacher shortages, especially in rural science, the supply of teachers in general seems to have been reasonably adequate. In the past decade with the introduction of metalwork into medium and smaller-sized schools a shortage of that category of teacher has arisen.

10.71 These six categories of teacher carry the brunt of vocational teaching. The greater part of the continuation course falls on them;

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[11] Table 14, Appendix V.D.

[12] To some extent this may have been due to differences in outlook in the past on the extent to which continuation courses should be related to other than purely local circumstances. *Vide* memorandum V.40 — Organization of whole-time continuation courses in borough, urban and county areas, page 15 (Department of Education—1941).

as does adult education. The scarcity of other types of teacher means that these teachers may have to take subjects such as science and mathematics in which their background and experience give them only a limited expertise.

10.72 If the only reason for these schools were the provision of continuation education, it would appear that many of them are too small to enable this education to be provided with the maximum degree of efficiency, using the terms in an economic sense. Moreover, the continuation course is now to be extended to three years and the curricula revised and an avenue provided to higher levels. The efficient utilisation of resources will, therefore, be all the more necessary.

CONCLUSION

10.73 This chapter has attempted a brief examination of post-primary education. The main objective has been to show that the approach adopted in the previous chapter on national schools, is valid here also, though it needs to be adapted to the particular characteristics of this level. Given the data at our disposal it was not possible to discuss the various factors as comprehensively as we would have wished, but we nevertheless feel that it provides some useful indicators of the effectiveness of activities at this level and that it also suggests the areas in which further enquiries should prove highly valuable.

CHAPTER ELEVEN

The Financing of Education.

11.1 One aspect of educational activity which seems sufficiently important to merit separate discussion is the pattern adopted for the financing of education from public funds. The methods and extent of public financing of the various educational levels appeared in chapter 5, as part of the consideration of the costs of education. The intention in the present chapter is to examine the appropriateness of financing methods in terms of their efficiency in promoting the various objectives which they may be intended to achieve.

11.2 To do this fully, however, would require, among other things, a knowledge of the goals which every item of expenditure was intended to promote. As of course no such precise listing of policy objectives is ever likely to be available it would not be possible to discuss the problem in a positive manner (i.e. here is what the State wants do to, and this is what it does) which would enable firm conclusions to be drawn as to the efficiency of the actual financing methods used. The alternative might appear to be to discuss the question in a normative way (i.e. to list what the State ought to do, and then describe the methods which would best enable this to be done) but this would involve policy judgements or recommendations on our part, and these are outside the scope of this Report. Instead then of using either one of these methods, the solution adopted here is to discuss the existing pattern in a general way from both view points.

11.3 By way of introduction it may be useful to summarise the major details of educational financing from public funds. Firstly, it may be convenient to distinguish the flow of funds to those who provide education on the one hand (school authorities etc.) and to those who avail themselves of it (parents and students) on the other. Table 11.1 accordingly classifies public expenditure for each educational level for the year 1961/2. It will be seen that the bulk of public funds flows to the school authorities and teachers rather than to the parents or pupils.

TABLE 11.1

Allocation of Public Expenditure on Education in 1961/2 between Schools etc. and Pupils

(£'000)

	Payments to School Authorities, Teachers, etc.	Payments to Parents/Pupils
National Schools	11,044	—
Secondary Schools	2,929	112
Vocational Schools	2,692	49
Other Second Level	170	—
Universities	1,197	103
Teacher Training and Other Third Level ..	195	20

Source: See Chapter 5.

11.4 It may next be useful to summarise the trend in the flow of funds to each major educational division. Table 11.2 accordingly summarises the position in this respect for some past years, together with the projected position for 1971 (this latter on the basis of the estimates in Chapter 5).

TABLE 11.2

Percentage Distribution of Public Expenditure on Education by Division, in Selected Years and as Projected for 1970/71

Year	National	Secondary	Vocational	University	Other	Total
	Percentage Distribution					
1926/7	80·3	5·4	6·0	4·4	3·9	100
1936/7	73·9	9·1	8·9	3·5	4·6	100
1946/7	68·0	11·3	11·2	3·7	5·8	100
1951/2	67·6	11·1	11·7	4·1	5·5	100
1961/2	58·8	13·6	12·2	7·0	8·4	100
1970/1	46·3	14·7	15·2	10·4	13·4	100

Source: See Appendix V.E.

It will be seen that the proportion of funds going to first level education has been falling; while that going to post-primary and universities has been rising.

11.5 Finally, before examining the financing pattern [illegible] each educational level it may be useful to sketch the type of framework within which the discussion may be conducted. Government activities in the economic sphere are generally classified into three main groups (1) those aimed at satisfying social or collective wants, (2) those which effect a redistribution of income and/or wealth, and (3) those designed to promote economic growth or stability. Examples of those in the first group might be the provision of a police force or of a light-house service, in the second group the provision of pensions to old or blind persons, and in the third group the granting of subsidies for the establishment of new firms or industries.

11.6 State activities in the educational sphere might fall into any or all of these three groups. Thus it is often contended that the benefits from education may accrue not merely to the person educated but also to the community as a whole. Hence there may be economic grounds for financing education on a collective rather than on an individual basis. Again, since the available data suggest that on average people with more education earn higher incomes than those with less, public provision of education might be intended to influence the income distribution in the economy. Finally, as the discussion of chapters 7 and 8 illustrated, governmental activity in education might be the result of concern for the prospects for economic growth.

11.7 In practice it is unlikely that any neat allocation of activities into specific groups would be possible. It may well be that an activity is intended to achieve more than one objective; for example, an educational scheme for poorer children might be aimed, among other things, at effecting an income redistribution in the community and also at providing trained manpower for an economic growth programme. Alternatively, an activity may be intended to achieve one objective, but the authorities may be prepared to accept that it will have consequential effects in other areas. Thus, for example in the case of roads which are made available freely and for which the necessary funds are raised by taxation, this particular method of financing may have been adopted because it might be administratively inconvenient to charge a toll to each road user for each journey. The primary objective of such a road programme may be to meet a social want, but the authorities concerned may be prepared to accept the re-distributional consequences which will result from it. It may be noted here that what is administratively feasible will vary with time and place; hence no dogmatic statements can be made on such topics.

11.8 In the case of re-distributional activities there may be an additional complication. Re-distribution of income may be effected in a number of ways by the State. It may be done on a personal basis, by imposing taxes on the incomes of wealthier persons and at the same time granting pensions and other types of cash supplements to poorer groups. Alternately, re-distribution might be attempted on a commodity basis, by taxing items which are mainly consumed by wealthier persons, such as diamonds, and subsidising items which are of greater relative importance for poorer groups such as bread and butter. When done on this latter basis, a commodity may then be either made available to all at the subsidised price, such as with bread, butter etc., during the war-time and post-war period, or it may be restricted to certain groups as with health scheme benefits.

11.9 In general, it would appear preferable on grounds of economic efficiency to effect all re-distribution on a personal basis, but there is the difficulty that if recipients of benefits are left free to spend them as they wish, they may neglect some essential items, such as food. Because people may behave in this 'irrational' way, it may be decided to operate a re-distributional scheme on a commodity rather than on a personal basis.

NATIONAL SCHOOLS

11.10 The national school system is explicitly financed in such a way as to make available free of direct charge, at least a minimum of education for all children. This pattern of financing might place the activity in one or both of two groups, (1) meeting a social want and (2) re-distribution of income from one sector of the community to another, but whether these are objectives or consequences is not clear. Thus, in organising a school system, the State could, in theory, have financed it in a manner intended to serve a particular objective, namely that of meeting the social wants of a specific group, by arranging that pupils be charged a fee sufficient to cover costs. In fact no direct charge is made and the necessary revenue is raised from general taxation. This has some re-distributional effects—in general from those who pay most taxes or who avail themselves least of the educational services, to those who pay least taxes or who avail themselves most of the service. This might be construed as an intention to achieve re-distribution or alternatively the re-distributional effect may be thought of not as an objective in itself but as a consequence of the first objective—namely, providing a community service.

11.11 In this context the administrative arrangements designed for education are, of course, relevant. In addition to the financing method used, the State also imposes legal sanctions requiring all children between the ages of 6 and 14 to attend school. Such sanctions influence educational participation in two ways. Firstly, there is the direct effect resulting from the threat of legal action against recalcitrant parents and children. Secondly, there is an indirect persuasive effect in that children under 14 cannot legally be engaged in full-time employment. Hence, given this restriction, there is no significant loss of earnings to be considered as one of the costs of acquiring this education. Again, however, these legal requirements appear capable of alternative interpretations. On the one hand, it might be contended that they constitute re-distribution on a commodity basis, since the State's intention is to ensure that everybody will receive, at least, the specified minimum of the subsidised commodity (in this case, education). Against this, it might equally be held that the regulations are primarily designed to stimulate the flow of educated people.

11.12 There are some further expenditure items which suggest that the State is prepared to accept re-distributional effects with regard to national school activities. These are the existence of such facilities as school meals and school medical service and grants of free school requisites to needy children, all of which suggest that the State is prepared to incur additional ancillary expenditure in order to ensure that all children may be in a position to derive reasonable benefit from the educational service provided.

11.13 It may be concluded that with national education, state activity probably falls into the areas of meeting a social want and effecting a re-distribution of income; it may possibly also involve the third area of promoting economic growth. Nothing definite could be said in economic terms concerning the first area, unless some data were available as to the private and social benefits produced by education, which would give some indication of the degree of service called for. With regard to the re-distributional area, again nothing definite could be said unless some measure of the intended re-distribution were given. One measure which is frequently suggested 'equality of opportunity' is of itself somewhat vague and would need to be more specifically quantified before any conclusions could be drawn. Thus, it may be noted that while there is equality of access to national schools for all children, there may be some disadvantage as regards school amenities for children in poorer areas. Again, as chapter 9 shows there are significant differences in the size of schools which suggests that equality of expenditure per pupil throughout the country would not result in equality of opportunity to derive benefit from a given period spent at school. As regards the third area of promoting economic growth, it is again not possible to say anything definite for reasons which are discussed in chapter 15.

Post-Primary Financing

11.14 In the case of post-primary education, the financing methods differ from those which operate for national schools. State financial aid for secondary school education is given in two ways, firstly, in the form of various grants to the schools themselves and, secondly, by way of scholarships to pupils.

11.15 The bulk of the subsidy to schools is accounted for by two items—teachers' incremental salaries and pupil capitation grants. One result of subsidising secondary schools in this way is to lower the price (fee) which the pupils are charged by the schools. It has no doubt stimulated consumption of the commodity (secondary education): there is, however, a very low participation rate on the part of children from some social groups which are generally associated with low incomes. The low participation rate of such children may arise not only because their families must pay the fees, but also because they must also meet the cost involved in keeping children at school rather than allowing them to enter employment.

11.16 In the case of children who enrol in secondary schools the State makes the same grant per pupil and pays the same salary scale to all teachers. Incremental salaries are paid to recognised teachers, the basis for recognition being the number of pupils enrolled (roughly speaking a school is allowed one extra teacher for every fifteen extra pupils). Many schools, however, do not engage the number of registered teachers to which they are entitled. This may well be due to the fact that the schools themselves must pay a basic salary to the teachers; this is additional to the salary paid by the State. Not only may the better-off schools score in the actual number of teachers, through taking up their full quota; they may also offer higher basic salaries and be more attractive places to work in and, as a result, more successful in getting teachers of subjects who are in short supply. This consideration, however, is counterbalanced to some extent by the fact that many teachers are members of religious orders.

11.17 Such is the pattern produced by the two major components of state financing; it must now be seen whether the remaining items modify the pattern. The two remaining significant forms of grant to schools are grants for science and grants for Irish. The intention here is, presumably, to encourage the teaching of these subjects so that while these grants might influence the composition of the curriculum available to pupils they probably have no great effect on the decision as to whether or not to enrol in a secondary school.

11.8 The remaining important financial item is scholarships. Though relatively insignificant when expressed as a fraction of total state spending on secondary schools, they are an important area in their own right in so far as they are the one item which might at first glance be taken to have as their aim the second expenditure objective, namely, re-distribution. Such scholarships were financed by local authorities prior to 1961 by which year they were costing roughly £90,000 annually. The 1961 Scholarship Act provided for central government expenditure in addition to the local authority effort and when fully operative (by 1965/66) should be running at an annual level of £200,000 State and £160,000 local authority spending. The maximum scholarship is generally about £100 in the case of boarding schools and £50 in the case of day schools.

11.19 Scholarships generally are awarded on the results of competitive examination, but in some areas a number of scholarships are reserved for particular categories of pupils e.g. pupils from small rural schools. There is also a limit on the size of family income, which at the present time is £1,200, and 75 per cent of scholarships are reserved for children whose family income is below this figure.

11.20 It may be, however, that under the present scholarship scheme children of very low income families may not be able to benefit to a reasonable extent. From a maximum of £50, day pupils would first need to meet a fee (which averaged £16 in 1961/2, the only year for which this data are available) then the cost of books, transport and other incidentals, added to which the family must bear the most substantial item, maintenance costs. Nor is the situation any better for the boarding pupil. In his case the average fee in 1961/2 was £93, though probably scholarship holders would attend schools with lower fees—perhaps a figure of £75 would be more typical but none the less the margin is not generous. The actual situation is not even as favourable as this, as in many areas the value of scholarships is a good deal less than the maximum, so that £40 would be nearer the average value of day scholarships and £80 for boarding.

11.21 The scholarship scheme is in practice, therefore, far more likely to encourage pupils from families whose incomes lie above some ' threshold ' minimum (below which education could not be afforded), but below the ceiling of £1,200. Families in the £500-£1,200 range may benefit further by the income tax concessions. These concessions enable parents to claim the child allowance, which would otherwise cease at age 16, for any child who remains in full-time education. In order to benefit from this concession it is of course necessary to be earning sufficient income. £500 is the amount which a married man may earn tax-free; hence beyond that figure, there may be a tax saving for each child who remains in full-time education; at present rates this saving is of the order of £30 per annum. It should be emphasised that this saving would arise only in the later years of post-primary schooling, that is from age 16 onwards.

11.22 Any judgment as to the effectiveness of these scholarship schemes would, as with other items of expenditure, depend on their objectives. If the objective be of a manpower nature, designed to increase the flow of more highly educated people, then the scheme might be regarded as fairly successful, since it probably selects a high proportion of students who will be successful at terminal examinations. Studies in other countries show that educational motivation and achievement are fairly closely correlated with the socio-economic grouping of parents. In particular, of the groups affected by scholarships, children of 'white-collar' workers tend to be successful, whereas children of unskilled or semi-skilled workers fare rather badly. Since the scholarship scheme seems likely to favour the former group it probably achieves a high degree of success, in the sense of selecting pupils who are likely to pass the subsequent examinations.[1]

11.23 If, on the other hand, the primary aim of the scholarship scheme is to provide some sort of equality of opportunity for children in lower income groups, there may be grounds for considering the scheme to be less successful, and for altering it accordingly, since greater incentives would appear to be needed for those in very low income groups.

11.24 Even these tentative conclusions, however, need to be qualified. While a manpower approach might apparently favour the present scheme, it might also be possible that such an approach to economic growth is too short-run. A longer-run approach might suggest the cultivation of every source of potentially successful students, on the basis that human talent is also a scarce resource.

11.25 In the case of the other major type of post-primary education, vocational education, there is an entirely different financing pattern. Here public authorities take responsibility for almost all of the expenditure involved, with pupil fees accounting for less than 5 per cent of total revenue. Of the 95 per cent which public authorities provide roughly two-thirds comes from the central government while one-third is contributed by the local authorities. It is likely that this financing pattern also produces some significant re-distributional effects though they are probably not so pronounced as with secondary schools. These would suggest that a poorer county would find it more onerous to raise the local grant than would a wealthier one, yet it is the poorer counties which would probably have the greater need for vocational schools, since in some cases they have a smaller fraction of children in other post-primary schools.

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[1] The data were not readily available on the social grouping of those who obtained scholarships.

THIRD LEVEL

11.26 In third level education the principal category of public expenditure is that on universities. Here, the major part of state spending takes the form of block grants to the various colleges, designed to cover the gap between their other receipts and expenditure. The effects of this system are similar to those discussed in connection with secondary schools. The state subsidy results in lower fees, which encourages attendance at universities, but only by those who can afford the fees and maintenance costs involved. This will, of course, depend in part on whether or not the student's home is in a university town. As before, the poorer student can have recourse to scholarships and, as before, scholarships do not vary in value with individual circumstances. The student is either eligible or not; as before, one may infer that scholarships most favour children of parents nearest the upper income limit of £1,200.

11.27 In university financing it is also important to note the effects of differences in the cost and duration of various courses. A degree course in Medicine is of six years duration; a course in Law may only take three years. Hence, even if the same annual fee is charged differences in cost will arise for the course as a whole. Again, one might have courses of equal duration for which different fees are charged, which would again result in different total costs to the students concerned. There are thus two conflicting aspects to be reconciled in this area. On narrow economic grounds it would generally be the intention that the respective fees charged should reflect the costs involved in each course. On social grounds, however, (and broad economic grounds if the reasoning of chapter 15 is accepted), it might be preferable that students should choose their field of study on the basis of personal preference and interests without undue regard to cost differences.

11.28 It seems reasonable to conclude that the present system achieves neither economic nor social objectives. While universities and, in some cases, professional institutions charge different fees for various courses, it may be surmised that the differences are the result of convention or approximation. The universities do not in fact know the relative costs of various courses; they are not, therefore, in a position to charge fees which reflect the costs involved. In particular, since they do not know how their cost patterns may alter as student numbers change, the universities do not at present appear to be in a position to pursue a narrow economic policy even if they wished to do so.

11.29 Nor is the position any better with respect to the broader objective. The cost differences, whether due to the differences in annual fees or to differences in duration of courses, are substantial enough to make it probable that for many students they are a factor in choosing a field of study. In the case of scholarships some attempt to meet this difficulty might be made by varying the value of the awards according to the faculty chosen. As already observed, however, scholarships are not really tailored at present to individual circumstances and varying their values according to faculty would not really remedy the position. Even if it did so, the problem would still remain for the majority of the students who did not hold scholarships.

CONCLUSION

11.30 Our brief survey in this chapter may serve to indicate the relevance of financing methods to the attainment of educational objectives. Without in any way attempting to say what the existing financing methods are intended to achieve, or what they ought to set out to achieve, it may at the same time be reasonable to conclude that they are not likely to be the most effective ones for the attainment of economic objectives in the educational sphere. This is hardly surprising. Historically, the main pressures for state aid to expand educational facilities were social and cultural in their emphasis. Many of the existing financing methods were introduced during the nineteenth century when the foundations of the present system were being laid. Whether and to what extent educational objectives have changed with the times is beyond our compass, though our terms of reference require us to take account of economic growth as one such objective of educational policy. Accordingly, in chapter 15 some indications will be given as to the changes in financing methods which this objective might justify.

PART IV

Part IV consists of Chapters 12, 13, 14 and 15. In Chapter 12 some possible variations in the educational system are discussed with a view to satisfying certain social and economic objectives and achieving the efficient use of resources. Chapter 13 contains the recommendations of the report as required by the terms of reference on the organisation of educational planning.

Chapter 14 refers to educational aid for developing countries. Chapter 15 considers the relationships of education to economic progress.

CHAPTER TWELVE

Educational Organization and Development

12.1 Using the analysis of the six preceding chapters the question of formulating alternative projections to those given in chapters 3 to 5 may now be considered.

12.2 One difficulty in the way of making such projections is that some assumptions as to the future course of educational policy and the objective(s) which such policy might seek to achieve, are necessary in order to formulate reasonable projections. Thus, the examination of manpower requirements in chapters 7 and 8 indicated that there would be scope for policies aimed at altering the qualificatory status of people leaving the educational sector. Given our terms of reference it would also seem that we should frame projections of the additional resources needed to meet such a manpower objective. In order to make such projections it is necessary to know (or assume) both the extent of, and the methods by which to increase the numbers of certificants.

12.3 In the following discussion it is, therefore, necessary for us to make various assumptions regarding the methods by which different targets or objectives might be achieved. Such assumptions are in no sense recommendations as to form(s) which future policies might take. Our aim is rather to see that the quantitative information which is an essential component of any soundly-based decision in this field, is available, in so far as that is possible.

12.4 We may, therefore, proceed to discuss in a general way how certain possible courses of action might affect some of the main problems which the foregoing analysis appears to pose. It will be appreciated that such a discussion, based as it is on quantifiable aspects of educational activity, is necessarily intended to be illustrative rather than comprehensive, both in its selection and consideration of problem areas.

12.5 The demand on the educational system may be thought of as two-fold, to cater for the numbers who seek education for any reason, and also to produce the qualified manpower required by an expanding economy. Three of the problems which our survey suggests need to be overcome in order to meet these demands are, the below average participation of certain sections in post-primary and higher education, the shortfall in the output of certain certificants and finally, the need to ensure that resources are used to best advantage. It may be useful initially, to review our findings on each of these matters.

12.6 In chapter 6 we showed the low proportion of children from the semi- and unskilled occupational group who proceed to post-primary education. We demonstrated also that the participation of these groups becomes progressively lower as one proceeds through post-primary and on to higher education. An important aspect of the problem is the high percentage of pupils who 'drop-out' after a year or two in junior post-primary education.

12.7 On the manpower side, the major point to emerge from chapters 7 and 8 is that on the basis of the educational targets selected, a serious shortfall is likely by 1971 in the number of junior cycle certificants entering the labour force. Very roughly we estimate a shortage over the decade of 76,000 workers with this level of qualification.

12.8 Chapters 9 and 10 have pointed to the problems of organization. Thus the existing organization of national schools results in an allocation of teachers that at the one extreme may give a teacher for 8 pupils and at the other, one teacher per 45 pupils or more. On the post-primary side, the schools are unevenly distributed and many are small. As Table 10.6 shows the number of pupils per equivalent full-time teacher varies from 12 or 13 in the boarding schools to 21 in the largest day schools. This in turn has repercussions on their curricula.

12.9 In addition we have shown in chapter 5 that simply to meet the normal expansion of the system will increase expenditure on education substantially by 1970. If special measures are to be taken to increase participation by certain groups or to produce more certificants, a further increase in expenditure must be accepted. Any suggestions therefore, that might lighten the burden are worthy of consideration. In what follows, it is proposed to consider the three questions of manpower needs, increasing participation rates, and more efficient use of resources.

MANPOWER

12.10 Here the main problem which it was found possible to identify is essentially a short-term one, namely to provide sufficient junior cycle certificants by 1971 to meet reasonable educational targets for the manpower requirements of the Second Programme for Economic Expansion. There are other areas where shortages may already exist but due to the lack of data they are not discussed here. Even if, however, these existing shortages had been eliminated by 1971 and the education system had been geared to the production of the required numbers of junior certificants, it would be naive to think that our manpower worries would be at an end. If the expansion of the economy is maintained, other shortages of qualified manpower will become manifest, most likely at a higher level of specialisation and qualifications. This specific 'deficit' represents the immediate effect of national development in necessitating the introduction of new skills and the deepening of old ones. In the short-run it will no doubt be largely met by substitution, either by national school leavers or by those who have spent some time in a junior cycle post-primary course.[1] But while the problem might in some sense be thought of as 'solved' there would none the less be a price which the economy as a whole must bear in terms of the reduced efficiency of the labour force.[2] The importance of these deficits lies in their being a warning for the future. The educational system may be unable to meet a 'target' expected of it simply because the 'target' was not specified in time. There is the problem of adapting the educational sector to changing conditions, apart from organizational problems such as providing the schools and teachers, [illegible] getting sufficient students into the courses. This of course, pre-supposes that it is possible to forecast manpower needs in sufficient detail and sufficiently far ahead. Our own work in Chapter 8 has demonstrated that there are severe difficulties in formulating estimates of this type in the light of present knowledge. Nor is it likely to become a simple task in the foreseeable future. There is no need here to digress into a discussion of the 'manpower approach' to education, but it would seem from our experience that manpower forecasting will need considerable development before it can be fully integrated into the general educational framework. In the realm of highly qualified manpower, limited forecasts can be made and in time such limited forecasts may acquire a high degree of accuracy.

12.11 It would be unrealistic however, to plan the organisation of post-primary education in Ireland solely on the basis of producing an additional 76,000 junior certificants by 1971. The value of this estimate is that it suggests that there may be economic grounds for supporting an expansion of the system so that it will be producing substantially more of these certificants by 1971. This means increasing the number of entrants to junior post-primary courses and inducing more of those who enter to stay on and complete their courses. A second measure which could contribute materially to the attainment of both these ends would be to raise the school leaving age. It appears however, that this measure will not be implemented before 1970. In the interim other measures are required to meet the problem of the sixties.

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[1] In the longer term such educational deficits could be a severe handicap in retraining persons with only a minimum education in new (and probably more complex) skills. This point is of course relevant given a working life of 40-50 years and the possible effects of automation.

[2] 'For most tasks there may be a minimum level of skill required to perform them at all, but this does not mean that a task should be performed by the least skilled person capable of doing it. People with more than this minimum may vary in the speed and effectiveness with which they can perform the task and those more highly skilled may do it more effectively than those less highly skilled. In the case of people with higher education there is the further point that they not only perform tasks that are put before them but they often discover new tasks to be undertaken.'

Planning the Scale of Higher Education in Britain: Some Statistical Problems, C. A. Moser and P. R. G. Layard. (Paper read before the Royal Statistical Society, May 27th, 1964).

12.12 The question then is how the manpower needs as indicated by chapters 7 and 8 might be met. Two separate 'deficits' were suggested by that discussion; the first relating to the ' deficiencies ' of young persons newly entering the labour force and the second relating to the educational ' deficiencies ' of the labour force as a whole. The solution to the second would be largely a matter of measures to raise the educational level of adults since the persons concerned would already have left the educational sector. In particular it may involve measures for retraining the unemployed, since it would seem from their occupational categories that their educational attainment was significantly below the average. Since there is not a general scheme of adult education or retraining in operation at present, and since no adequate data on this topic are available to us, it is not proposed to discuss this problem here, but merely to record its existence. The solution to the first mentioned 'deficit' on the other hand would presumably be largely a matter of changes in the pattern of education for young persons, since the problem arises from the expected shortfall in the educational status of those leaving school and entering employment during the current decade.

12.13 The present discussion of manpower needs may, therefore, be concentrated on this ' deficit '. The scope of the problem was indicated in Table 8.4. In that table it was seen that the major ascertainable 'deficit' was in the area of persons with junior post-primary qualifications; there being an estimated shortfall of 76,000 for the decade as a whole in the numbers of such persons entering employment. This total yields an annual average of 8,000, but on the assumption that the ' deficits ' of earlier years will not be made up and since the number of certificants are expected to be higher in the later years of the decade, it may be more appropriate to take an annual figure of 5,000 as being the order of magnitude of any required effort.

12.14 There are two methods by which such an increase in the annual number of certificants might be achieved, firstly by an expansion in the numbers who enter post-primary schools (assuming that the requisite number of those who entered would remain for the three or four years needed to obtain a certificate), or secondly by a reduction in the numbers of those who leave post-primary schools before they obtain a qualification.

12.15 It may be useful to ascertain what scope exists for each of these approaches. As regards the possibility of expanding the number of entrants to post-primary schools Table 3.2 indicated that by 1971, 42,700 of the children aged 14 would be in such schools, while an estimated 14,000 would still be in first level schools or not at school. On the face of things, therefore, there would be ample scope for expanding enrolments; some qualifications, however, must be made to the figure of 14,000. Firstly, some of these children would be handicapped—Table 3.2 shows 400 as the number who would be in special schools. It may be observed that this number, being less than one per cent of the cohort may considerably underestimate the full extent of such defects, so that a figure of at least double might be more relevant here.[3] Secondly, as indicated in chapter 9, a significant fraction of pupils are 'delayed' in their progress through the national schools—Table 9.14 indicated that 13.5 per cent (or 6,000) of fifth standard pupils would not have completed their national school curriculum by the age of 14. It is unlikely that such pupils would complete a post-primary course under existing arrangements. This leaves a figure of 7,000 then, as the maximum number who might reasonably be expected to respond to any scheme to expand entrants to post-primary schools. Whether this number of entrants would yield 5,000 certificants would depend on the 'drop out' rate, hence it may be appropriate to turn now to the second possibility, namely the scope for reducing such 'drop-out'.

12.16 In paragraph 6.27 it was indicated that in the year 1962/63 about 4,200 pupils in the junior cycle of secondary schools left education altogether without a post-primary certificate. Similarly from paragraph 6.68 it would appear that in the same year about 7,000 pupils left the junior cycle of vocational schools without a post-primary qualification. Thus about 11,200 or roughly one-third of the number of entrants to junior cycle courses 'dropped out' before obtaining a qualification. It may be relevant to note the disparity in 'drop-out' rates suggested by these figures, the 4,200 secondary pupils were about 20 per cent of the entrants to the junior courses of such schools, whereas the 7,000 were over 40 per cent of those who enrolled in the junior cycle (continuation) of vocational schools. Such a disparity does not necessarily reflect on the type of school, of course—one must consider among other things the type of pupil concerned.

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[3] See report of Commission of Inquiry on Mental Handicap (S.O.).

12.17 If these 'drop-out' rates were to continue in coming years it would seem that the first prospect, of expanding entrants (by a maximum of say 7,000) would scarcely yield 5,000 extra certificants unless the 'drop-out' rate of pupils was significantly reduced. Given the data on social groups in chapter 6, it would seem likely that the drop-out rate of such pupils would approximate more to that of continuation students, so that a significant shortfall would occur.

12.18 To assess the feasibility of the second course of action—namely an attempt to reduce the 'drop-out' rate, it would be necessary to estimate what the response would be to various policy measures. While no direct knowledge is available on this topic it is probable that among the factors which would have to be taken into account in devising such measures are the intellectual ability and interests of the children, the financial circumstances of the families concerned, the distance from a post-primary school, and the knowledge and attitudes of such families regarding education.

12.19 This suggests that the policies which might help to reduce 'drop-out' would be similar to those which would increase entrants, since these would both call for increased financial provisions to encourage pupils to enter/remain at school and for wider dissemination of information concerning educational opportunities. Financial provision might be expected to take two main forms, one an increase in the number and/or value of scholarships to pupils and secondly an increased provision of school facilities in at least some areas. Transport might be included under either head; scholarships might contain a travel element, or transport services might be provided along with school and other facilities. This latter method would probably require some time to implement effectively, accordingly it may be thought of as more appropriate to a long-run solution of the problem. In the shorter-run (and the period of 'manpower deficit' discussed here—that up to 1971—may be thought of as a fairly short-run period) this would leave scholarships as the more obvious remedy.

12.20 However, scholarship schemes pose a problem in this respect. Since scholarships are usually awarded on the results of competitive examination it does not follow that they would be obtained by those pupils who would otherwise either fail to enter, or also 'drop-out' of post-primary schools. In fact it is reasonably probable that a significant fraction of any additional scholarships would be obtained by pupils who would remain on at school anyway. Even *if it were assumed that the performance at scholarship examinations* of pupils who at present do not enter, or who ' drop-out ' of junior cycle, would be comparable with that of existing pupils who complete junior cycle, then it might be expected that they would obtain not more than 60 per cent of any additional scholarships. On this basis, to obtain 5,000 extra certificants from a course assumed to be of three years' duration would require a total of approximately 34,000 scholarships.[4] If these were of an average value of £25, the annual cost would thus be £850,000. Such an expansion would lead to an increase in overall pupil numbers and to a need for additional teachers and buildings. The current costs of these resources might be taken as being in the region of £450,000 annually. Hence the total annual expenditure would be of the order of £1.3 million (scholarships, plus additional resources). The additional capital expenditure is estimated at £2 million.

12.21 This exposition of one method by which the manpower problem might be resolved in the short-run is rather brief, but sufficient to suggest that the costs involved are likely to be substantial.

12.22 The second method of resolving the manpower question suggested above was by an increased provision of schools and/or other facilities. As there is normally a time-lag in implementing any programme of this nature it might be supposed that such a solution would only begin to have a significant effect in the longer-run (which in this context is taken as post-1970). By that time the proposed raising of the school-leaving age from 14 to 15 would be implemented. Hence it may be useful to take this factor into account in the discussion.

12.23 The raising of the school-leaving age might be implemented in a variety of ways. However, on the basis of previous official policies and of the analysis of foregoing chapters, the following assumptions might form a reasonable basis for discussion. Firstly, it may be expected that facilities for the extra whole year would continue to be available free of direct charge in national schools, though this might be difficult in some city areas. Secondly, since as chapter 9 indicated, the majority of children have completed their primary education by the age of 13 plus they would be qualified for post-primary education of some sort. Thirdly, also arising from the analysis of chapter 9, it would seem that while some pupils could complete three years of post-primary education by 15 plus, the modal (largest) group would be in a position to complete only two years. It would be reasonable to infer that if the object in raising the school-leaving age is to provide some additional education for the pupils, then it would be necessary to make available post-primary facilities for the majority of children.

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[4] **For details of this and subsequent calculations, see Notes to this chapter.**

12.24 It may be useful to summarise the existing position regarding post-primary facilities. Until recent years at any rate, the Minister for Education did not assume any direct responsibility for providing such facilities. His function was interpreted as being rather to assist private enterprise and local bodies to provide such facilities as they deemed appropriate and practicable. In consequence the existing pattern of facilities is rather diverse as Table 12.1 indicates.

12.25 Given these figures it would seem that on the basis of present organisational arrangements (e.g. separate boys' secondary, girls' secondary and vocational schools) it would be extremely difficult to provide full facilities in all, especially smaller centres. In particular it would seem from the data of chapter 10 that the smaller centres would probably result in schools which were both expensive to operate and likely to lead to incomplete coverage of subjects.

12.26 In theory then, while post-primary education could be provided in national schools (secondary tops), in vocational schools, in secondary schools, or in the recently announced comprehensive schools, in practice it is likely that in most areas local conditions will reduce the number of effective choices. Consequently it might be useful to adopt solutions which make the maximum use of existing facilities rather than seek to impose a uniform pattern on all areas. A convenient form of classification of areas might be that contained in Table 12.1, hence some comments on the specific problems of each category may be of use.

12.27 **Cities and large towns:** Even though these are the areas which possess a wide range of facilities, they are also the areas of likely population increase, hence there is the likelihood of a continuing tendency for capacity to fall short of requirements. Consequently it would appear sensible to preserve considerable flexibility of approach for these centres. Among the more specific measures which suggest themselves are the following: (i) in the case of vocational schools (a) providing the announced three year continuation course at a standard fee in all schools, (b) extending the curriculum, (c) reducing the minimum age of entry to 12 plus, (ii) giving secondary schools an option to accept a different pattern of state financial support which would enable them to give tuition to junior cycle pupils at the same standard fee as that of vocational schools. We have seen that 75 per cent of secondary pupils were being charged less than £20 per annum in 1961/62, (iii) in the case

TABLE 12.1

Number of Centres with Post-Primary facilities,[1] September, 1963

Centrality (Location)	Total Number of centres (Cities, Towns and Villages and Rural centres with a population of less than 200)	Total Number of centres with Post-Primary Facilities	Type of Post-Primary Facilities							Number of centres with no Post-Primary School
			Secondary and Vocational for Boys and Girls	Secondary for Boys and Girls no Vocational	Boys' Secondary Only	Girls' Secondary Only	Vocational only	Boys' Secondary and Vocational	Girls' Secondary and Vocational	
		Number of Centres with such facilities								
Cities[2]	5	5	5	—	—	—	—	—	—	—
Large towns 1,500 and over ...	96	95	81	2	1	4	1	1	5	—
Small Towns 500–1,500 ...	154	113	29	22	1	14	27	2	18	41
Villages 200–500	255	64	5	13	3	19	19	1	4	191
Rural centres ...	406	52	3	4	2	8	34	—	1	354
TOTAL ...	916	329	123	41	7	45	81	4	28	586

NOTE: No account is taken here of factors which may make a school unsuitable for some pupils in an area, as discussed in paragraph 6.120.

[1] Excluding juniorates and boarding schools which take no day pupils. Secondary tops are included.

[2] The four county boroughs and Dún Laoghaire.

of national schools explore the possibilities of providing 'secondary top' departments in schools where pupil enrolment would be sufficient to sustain them. It might also be useful to consider whether some national school buildings, especially those in the centre of cities, which have a high proportion of unused capacity could be used as post-primary schools, even as an interim measure.

12.28 **Smaller towns and villages:** These are the areas as a rule which at present have partial post-primary facilities only. It might be useful to include here also some small towns which now have full post-primary facilities but which are such that the individual schools are so small that they are either exceptionally wasteful of real resources or are so restricted in facilities that inadequate choices are available to the children. These communities present a special problem—partly technical, partly political and partly social. The idea of a single comprehensive post-primary school might be regarded as a means of solving the technical problems of such areas. If adopted, it would mean that the area from which the school would draw its pupils could be kept as small as would be technically feasible. On the other hand, the attempt to provide several different types of schools in such areas would have the effect of requiring much larger school districts if the schools are to be sufficiently large, and hence considerably greater provision of transport. Whether such a technically feasible solution to the problem would be acceptable in a given area is of course a separate question, though it is none the less relevant to the definition of any viable solution. Social aspects are also important in the evaluation of acceptable solutions. Partly for historical reasons, it has been traditional in Ireland to separate children into different types of schools, especially at the post-primary level, on the basis of a number of criteria, such as sex, religion, linguistic orientation, social class and educational orientation. As indicated above there would not appear to be any particular technical or economic difficulty in maintaining this tradition in the larger towns and cities. There is, however, a real problem in maintaining this tradition in the smaller areas, without either (i) increasing the cost of the provision of adequate facilities to all groups and sub-groups or (ii) drawing pupils from very wide geographical areas and hence increasing both the transport problem and the boarding problem.

12.29 Assuming that the raising of the school-leaving age were implemented in a manner similar to that described, it might reasonably be taken that it would result in an increase in the numbers enrolling in post-primary courses. This increased enrolment might in turn be expected to lead to a rise in the numbers obtaining junior cycle certificates. If this additional number is not sufficient to meet the manpower target, inducements might be provided to prospective students in order to stimulate additional enrolments. Such inducements might take the form of a reduction in fees or of increases in the number and/or value of scholarships. On the basis of past experience such inducements should lead to increased student numbers and the process may be continued until the desired numbers are obtained.

12.30 It is difficult to give any indication of the costs to the State of such a policy. If the provision of post-primary facilities is adequate to produce the desired increase in certificants, then it may be measured in terms of the additional costs of providing and maintaining post-primary facilities for these pupils as compared with the costs of primary level facilities (since this is where they would otherwise spend their time from the age of 13 to 15). If the number of pupils involved is again taken as 16,000 and the differences in the annual pupil cost at £40, this would give a total annual cost of £640,000. In addition there would be the increased capital outlay of building and equipping this number of post-primary places. This may be estimated to total £2 million.

12.31 Any expenditure by way of increased scholarships etc. would be additional to these figures. It may also be observed that state expenditure would increase if secondary schools were to adopt a financing pattern along the lines suggested in paragraph 12.27.

12.32 Clearly any discussion of events in the future must be of a rather tentative nature. None the less the broad and inescapable conclusion would appear to be that significant expenditure increases would be a corollary of any attempt to increase the numbers of junior cycle certificants. In particular it may be emphasised that any such programme would very probably require scholarships or other forms of encouragement or inducement in order to attract and retain the required pupil numbers.

12.33 This raises a question as to the validity of any attempt to resolve manpower requirements without specific reference to the problem of participation. The efficacy of any scheme to remedy the manpower situation rests on its success in attracting and retaining more pupils in the educational sector. We have seen earlier (chapter 6) that the question of participation is affected by various factors, hence it may be more realistic to view the manpower deficit as being one facet of a much wider problem and to seek the solution accordingly.

PARTICIPATION

12.34 The data of chapter 6 showed that there are significant differences in the extent to which various groups participate in education. Such differences are evident both as between socio-economic groups and between geographical areas. We were unable to examine differences in participation as between various income groups since the necessary data on income distribution are not available.

12.35 While there are no doubt wider and more fundamental considerations which would support any case for greater participation in education, it would seem that there are also economic grounds for seeking to promote such a development. Thus the manpower aspects discussed above are to a large extent bound up with the question of participation, since increased numbers of certificants must largely come from those who otherwise would not be participating in the educational system at that level.

12.36 The participation problem affects every level and division of the educational system. The main stages where different rates of performance were found to occur, are:—

(1) rate of progress through primary school

(2) rate of entry to post-primary school

(3) rate of continuance in post-primary school

(4) rate of entry to university and other third-level establishments.

Children of parents in certain social groups, including those with lowest income, were found to have a higher probability of failing to maintain their position at each of the stages (2) to (4). This is probably true also of the primary stage and also drop-out at third level, which we were not in a position to analyse. Hence it is unlikely that improving the situation at just one of these stages would be sufficient to ensure a wider participation pattern throughout.

12.37 In general it might be taken that within the context of the existing system, the measures which would stimulate participation on the part of under-represented groups would be the same as those suggested above in connection with manpower, namely, an increase in the number of scholarships or grants available, increased provision of educational facilities and wider dissemination of information regarding educational opportunities. If, however, the object is to stimulate participation by those groups with low participation rates, it may be necessary to be more specific in the type of measure used.

In particular it would seem that scholarships, in addition to covering such costs as fees and books, would also in some cases need to be valuable enough to cover maintenance or boarding costs. This latter point arises from the fact that unlike many other items, there are still costs to the individual availing himself of education, even when it is provided 'free'. Thus in addition to such direct costs as fees, books, transport, there are also the maintenance costs of feeding and clothing the student. Allied to these is the relative importance of the 'opportunity' costs involved (e.g. the amount which it is felt the student might earn if he/she were to enter employment rather than continue studying). It will be recalled, however, that the evidence suggests that the differences in participation cannot be ascribed entirely to differences in income. Differences in parental knowledge of and attitudes towards educational opportunities, for example, might also be a significant factor.

12.38 It would seem that the degree of financial assistance given to pupils would need to vary for at least three reasons, (i) the income or other relevant factors of the pupil's family, (ii) the distance he lived from any given educational establishment and (iii) the fees or other costs associated with the establishment.

12.39 There are a number of ways in which such a system of variable awards might be effected and it is not proposed to discuss the matter in detail, but the following comments are illustrative of what might be feasible.

12.40 One method would be that the value of awards (whether scholarships or grants) should vary with parental income, with adjustments for family size and structure. To keep the scheme administratively simple, the values might be altered at intervals of £100 in adjusted parental income, with minimum and maximum points set. Thus the maximum award might be given to children whose parental income did not exceed £300, thereafter diminishing in value at intervals of £100 up to say a limit of £1,500, where a minimum value scholarship might be awarded. Regarding the administrative problem of ascertaining the income of the families involved, applicants for scholarships whose parents pay income tax might have their income certified by an Inspector of Taxes. It may be noted, however, that special difficulties might arise in the case of self-employed persons.

12.41 The second and third components in any system of variable grants—variable fees and variable transport costs—are likely to present the most difficult at post-primary level. At the first level, since national schools are not fee-charging it is only the distance factor which would need to be ascertained for any pupil. At third-level, where there are only a small number of university colleges and other establishments, the more important of these two factors would be whether the student had to live away from home, since the fees of the colleges are similar for similar courses.

12.42 At post-primary level the situation is more complex and the nearest establishment need not necessarily be acceptable to any prospective pupil. In this context it may be noted that the table summarising the available post-primary facilities over-simplifies the situation. Even when secondary facilities for day pupils are available in the vicinity, the fees of the particular establishments, limitations on entry, the lack of knowledge or social attitudes regarding attendance at such schools may be such that a proportion of the children in the area, especially religious and linguistic minorities, may not be in a positon to attend such a school. Hence, for the children of poorer parents or larger families the effective range of choice is considerably more limited than that indicatod by the table. In the time available to us it was not possible to make a precise analysis of this aspect. Some impression of the choice available to children outside of cities and large towns may however, be obtained from Table 12.2, which shows the number of secondary and post-primary schools in each centre. It will be seen that, on the whole, girls have a slightly wider range of possibilites open to them in choosing a post-primary school. In the majortiy of centres, however, there is only one school available to prospective pupils.

TABLE 12.2

(a) Number of Centres with (i) Secondary and (ii) Post-Primary Schools classifed by (i) the Number of Secondary (including Secondary Tops) and (ii) Post-Primary Schools in each Centre and by size of Centre, September, 1963

Size of Centre	(i) Secondary Schools					(ii) Secondary or Vocational Schools				
	TOTAL Centres with such Schools	Number of such Schools in each centre								TOTAL Centres with such Schools
		1	2	3	4 or more	1	2	3	4 or more	
	Number of Centres having such schools									
Cities	5	—	—	—	5	—	—	—	5	5
Towns 5,000 and over	27	—	6	6	15	—	—	6	21	27
Towns 1,500–5,000	67	10	45	5	7	5	9	42	12	68
Smaller towns 500–1,500 ...	86	54	31	1	—	52	48	17	1	118
Villages 500–200 ...	45	40	5	—	—	51	11	2	—	64
Rural	18	18	—	—	—	49	3	—	—	52
TOTAL ...	248	122	87	12	27	157	68	67	39	329

TABLE 12.2 (contd.)

(*b*) *Number of Centres with* (i) *Secondary and* (*ii*) *Post-Primary Schools accepting Boys, classified by the Number of such Schools in each Centre and by size of Centre, September*, 1963.

Size of Centre	(i) Secondary Schools					(ii) Secondary or Vocational Schools				
	TOTAL Centres with such Schools	Number of such Schools in each centre								TOTAL Centres with such Schools
		1	2	3	4 or more	1	2	3	4 or more	
	Number of Centres having such schools									
Cities	5	—	—	—	5	—	—	—	5	5
Towns 5,000 and over	25	14	9	1	1	1	12	9	3	25
Towns 1,500-5,000	60	47	12	1	—	6	42	12	1	61
Smaller towns 500-1,500 ...	54	53	1	—	—	51	29	1	—	81
Villages 500-200 ...	22	22	—	—	—	34	7	—	—	41
Rural	9	9	—	—	—	41	2	—	—	43
TOTAL ...	175	145	22	2	6	133	92	22	9	256

(*c*) *Number of Centres with* (*i*) *Secondary and* (*ii*) *Post-Primary Schools accepting Girls, classified by the Number of such Schools in each Centre and by size of Centre, September*, 1963.

Size of Centre	(i) Secondary Schools					(ii) Secondary or Vocational Schools				
	TOTAL Centres with such Schools	Number of such Schools in each centre								TOTAL Centres with such Schools
		1	2	3	4 or more	1	2	3	4 or more	
	Number of Centres having such schools									
Cities	5	—	—	—	5	—	—	—	5	5
Towns 5,000 and over	27	9	5	10	3	—	9	5	13	27
Towns 1,500-5,000	65	54	9	2	—	7	49	8	2	66
Smaller towns 500-1,500 ...	83	79	4	—	—	61	47	2	—	110
Villages 500-200 ...	41	39	2	—	—	50	9	1	—	60
Rural	16	16	—	—	—	48	2	—	—	50
TOTAL ...	237	197	20	12	8	166	116	16	20	318

NOTE: Excluding juniorates and boarding schools which take no day pupils.
Source: Departmental lists of secondary and vocational schools.

12.43 There does not seem to be any *a priori* reason why the same solution to this problem need be adopted in all areas of the country, provided that suitable arrangements can be devised which cater for local conditions.

12.44 In this context the question of population distribution relative to area is a basic factor in the economic provision of any service such as education. The greater the density of population the more feasible it is to have many service units distributed within the area. This has the effect of providing services relatively adjacent to the habitations of the population, thus reducing the transport charges, facilitating the full use of resources and making it feasible, by having several units in a limited area, on the one hand to provide competition between units and on the other to develop units catering for special groups or providing special services.

12.45 If the density of population in an area is low, problems of various kinds relating to the provision of services arise. It is more difficult to provide an adequate range of services convenient to people's homes, hence either more transport is required or units have to be set up which cannot be operated at full capacity because an adequate demand does not exist in the relevant catchment area. It is also more difficult to provide facilities for special groups of the population and to provide specialist facilities of various kinds. The force of these general observations is readily apparent in many activities, whether in the provision of educational, library, health, advisory or entertainment services. Hence a form of organisation suitable to a densely populated area may be quite unsuitable to a sparsely populated one. In particular a sparsely populated area needs a larger catchment area and hence more transport. It is of some interest then to compare the average density of population in Ireland with that of other Western European countries and also to compare the various regions of Ireland with one another.

12.46 Table 12.3 shows that apart from the Nordic countries Ireland is one of the least densely populated countries in Western Europe. The Nordic countries, however, have large tracts of their northern areas effectively unpopulated—their populated areas would have a considerably higher density than the averages shown in the table. Hence there are greater problems, and higher costs per unit of service, in providing services in Ireland than in most other Western European countries.

12.47 Table 12.4 shows that the density of population is lower in Connacht and Ulster than in Munster and Leinster. Looking at the figures for the individual counties we could include Clare, Kerry and Longford with the Western and Northern counties as areas of low density. Hence solutions which might be appropriate in one area might not be equally appropriate in another area.

TABLE 12.3

Density of Population in certain European Countries, including Ireland

Country	Population[1] per square kilometer
Austria	85
Belgium	302
Denmark[2]	108
Finland	13
France	86
Federal Republic of Germany	149
Greece	64
IRELAND	40
Italy	167
Luxembourg	124
Netherlands	351
Norway	11
Portugal	98
Spain	61
Sweden	17
Switzerland	137
England and Wales	309
Scotland	66
Northern Ireland	102
Yugoslavia	74

[1] Population for some countries is *de jure*.
[2] Excluding Faeroes Islands (25) and Greenland (0).
Source: U.N. Statistical Yearbook 1963. Table 2.

12.48 It may be noted in passing that the population aged 5 to 14 is distributed geographically in a manner similar to that displayed for total population in Table 12.4.

12.49 As the population is in general declining in the low-density areas and increasing in other areas the disparities now evident will increase rather than decrease, making the economic provision of services in sparsely populated areas relatively more difficult as time

TABLE 12.4.

Density of Population by Province, 1961

Province	Population 1961 '000	Area Acres '000	Persons per 1,000 Acres
Munster	849	5,962	14·2
Connacht	420	4,231	9·9
Ulster (3 counties)	217	1,980	11·0
Dublin City and County	714	228	313·5
Rest of Leinster	618	4,623	13·3
TOTAL	2,818	17,024	16·6

Source: Statistical Abstract of Ireland 1963. Tables 8 and 53.

goes on while increasing the pressure on the existing resources in other areas.

12.50 From an organisational viewpoint the first step towards dealing with the problem might be to define, even provisionally, post-primary school districts. Such a definition might be based on the concept that (with limited exceptions for whom special provisions would be made) each such district would (1) have available within it a complete range of post-primary facilities whether or not they were available in one school or even one centre, (2) the potential pupils in each such district would be classified into three or four distance categories with respect to the post-primary facilities. These categories might, for example be (i) within a mile of chosen or nearest acceptable facilities, (ii) within 5 miles of chosen or nearest acceptable facilities, (iii) within effective bus distance (e.g. 10 miles) of chosen or nearest acceptable facilities, (iv) outside effective bus distance of chosen or nearest acceptable facilities; (3) that some responsibility for the transport of children in category (iii), and the boarding expenses of children in category (iv), would be accepted by the State, either directly or through authorised local bodies, (4) that adequate space and teacher facilities to cover pupils in that district in categories (i) to (iii) should be available.

12.51 To gauge the potential number of post-primary pupils by district, we divided the country into a number of catchment areas based on large towns. Every national school in the country was then allocated to the nearest large town and the total pupils thus allocated to each town was calculated. Table 12.5 gives a summary of the results—the details for each area have been supplied to the Department. (For this purpose all available information on the national schools was put on punchcards, one for each school.) These numbers of primary pupils may be converted into numbers of potential post-primary pupils as follows. The total post-primary enrolment is equivalent to about a quarter of the national school population. By 1970 the post-primary *stock* is projected to be equivalent to about a *third* of the national school pupils. If these ratios were to obtain in each area, the number of primary pupils needed to give a post-primary school of 150 pupils—the minimum specified by the Department for building grants to secondary schools—would be 450. On that basis, most of those catchment areas would have a reasonable number of pupils, but it will be noted that the areas are very large—there are only 154 of them covering the whole country. The figures for smaller catchment areas—323 for the whole country—are shown in Table 12.6. Here we see that there is a number of areas with quite small numbers of potential pupils. It will be clear that if the catchment areas were to be based on any smaller size of town,

TABLE 12.5

Catchment Areas based on Large Towns, Classified by Number of Pupils in National Schools[1] *in the Area,* 1962/63.

Province	Number of Pupils[2] in National Schools in the Catchment Area													
	Under 300	300–449	450–599	600–749	750–899	900–1049	1050–1199	1200–1349	1350–1499	1500–1649	1650–1799	1800–1949	Over 1950	TOTAL
	Number of Catchment Areas													
Leinster	—	—	2	2	1	2	6	5	4	1	2	3	27	55
Munster	—	1	—	—	2	2	1	7	2	4	4	3	26	52
Connacht	—	—	—	—	—	1	2	—	—	3	3	3	16	28
Ulster (3 Counties) ...	—	—	1	—	—	2	—	4	2	1	2	2	5	19
TOTAL ...	—	1	3	2	3	7	9	16	8	9	11	11	74	154

[1]Excluding Protestant schools and special schools. [2]Average number on rolls.

TABLE 12.6

Number of Catchment Areas, based on Large and Medium-sized Towns, Classified by Number of Pupils in National Schools[1] *in the Area,* 1962/63.

Province	Number of Pupils[2] in National Schools in the Catchment Area													
	Under 300	300–449	450–599	600–749	750–899	900–1049	1050–1199	1200–1349	1350–1499	1500–1649	1650–1799	1800–1949	Over 1950	TOTAL
	Number of Catchment Areas													
Leinster	8	10	16	19	9	10	6	2	5	5	2	2	15	109
Munster	5	17	11	16	11	9	9	8	1	4	2	3	15	111
Connacht	3	9	6	5	6	7	5	6	1	4	2	—	9	63
Ulster (3 Counties) ...	6	2	7	5	4	4	4	1	1	2	1	1	2	40
TOTAL ...	22	38	40	45	30	30	24	17	8	15	7	6	41	323

[1]Excluding Protestant schools and special schools. [2]Average number on rolls.

the number of areas with a small number of pupils would increase considerably. It will be appreciated, of course, that our figure of 450 primary pupils would give a post-primary school of 150 pupils only on condition that the pupils were not divided by sex or by secondary/vocational or by any other factor. If such factors were to operate in an area, then clearly much larger numbers of primary school pupils would be necessary. Furthermore, the number of areas with small numbers of primary pupils may well have increased by 1970 owing to movements of population.

12.52 This leads us to consider the extent to which transport would be required. As a guide to this Table 12.7 shows the distribution of all national school pupils (aged 11) by the distance which their national school is from the nearest large town; Table 12.7 (a) shows the distance from the nearest large or medium-sized town. It will be

TABLE 12.7

Percentage Distribution of Pupils in Catholic National Schools (excluding special schools) by Distance of National School from Nearest Large Town, 1962/63.

Distance from nearest large town	Distribution of Pupils in National Schools
Miles	Percentage Distribution
Less than 1 mile	51·5
1 mile, less than 5	9·3
5 miles, ,, ,, 10	24·8
10 ,, ,, ,, 15	10·4
15 ,, ,, ,, 20	2·5
20 ,, ,, ,, 25	0·6
25 ,, ,, ,, 30	0·4
30 miles and over	0·5
TOTAL ..	100·0

TABLE 12.7 (*a*)

Percentage Distribution of Pupils in Catholic National Schools (excluding special schools) by Distance of National School from Nearest Large or Medium-sized Town.

Distance from nearest large or medium town	Distribution of Pupils in National Schools
Miles	Percentage Distribution
Less than 1 mile	57·6
1 mile, less than 5	15·7
5 miles, ,, ,, 10	19·4
10 ,, ,, ,, 15	3·4
15 ,, ,, ,, 20	3·1
20 ,, ,, ,, 25	0·5
25 ,, ,, ,, 30	0·1
30 miles and over	0·2
TOTAL ..	100·0

seen that, even with the medium-sized towns, nearly 30 per cent are more than five miles from a centre. This represents some 15,000 children. Tables 12.9 and 12.10 at the end of this chapter show the position in 1962/63, the size of the catchment areas available to the existing post-primary schools and the distribution of national school pupils (aged 11) by distance of the national school from them. It will be seen for instance that almost a quarter—i.e. about 10,000 pupils—were more than 5 miles from the nearest post-primary school and that about 4.5 per cent, or 2,000 pupils, were more than 10 miles from the nearest post-primary school. These are the distances of the national schools of course, not the distances of the pupils' homes.

12.53 To frame any projection of the costs of such a scheme as that outlined in paragraphs 12.50 to 12.52 above, it would be necessary to decide the categories of pupils to whom variable awards would apply. It might be expected that the maximum grants would be payable to children whose fathers were unemployed, disabled, deceased, while lesser awards might suffice for children of families with larger, but still low incomes e.g. families of agricultural workers.

12.54 The available data suggest that about 5 per cent of the total population in any age group would qualify for maximum grants, while a further 20 per cent would be eligible for some grant. Using these percentages as illustrations and assuming that about 5 per cent of any group would need to be boarding pupils at post-primary level, the estimated cost at junior cycle would be approximately £135,000 for each year of a junior cycle course, so that a two-year course would cost £270,000 and a three-year one £400,000 annually.

12.55 At senior cycle, if it is assumed that 30 per cent of an age group would be likely to obtain such a course the cost for a two-year course would be approximately £600,000 annually. This would include an allowance for earnings foregone.

12.56 At third level, assuming that the target was to achieve a participation rate for these groups equal to the overall average projected participation rate of chapter 3, and that 50 per cent of pupils would be boarding, the cost for university courses would be in the region of £1.1 million annually. However, it is unlikely that such a target could be achieved quickly, hence it might be more realistic to halve this target rate for 1971, so that expenditure by that year would be £550,000.

12.57 It might be expected that some of this expenditure at each level would be offset by savings on scholarships of the usual type.

12.58 The increased participation rates on the part of such groups might be expected to produce related increases in total student numbers at each level, and hence a need for additional resources. These may be estimated to cost £450,000 annually for junior cycle, £225,000 for senior cycle and £150,000 for university level, or a total of £825,000 for current resources. In addition the extra capital spending may be estimated at £2 million, £0.5 million and £1 million respectively, a total of £3.5 million.

12.59 Such a system of variable grants might be expected to reduce the disparities in participation at two of the four stages noted in paragraph 12.36. (It would not, of course, remove all disparities of opportunity e.g. for university education between those who live in university towns and those who would have to meet boarding costs). The remaining stages—progress through primary schools, and progress through post-primary schools—are influenced by factors both external and internal to the schools themselves. In so far as external factors are concerned, it may be expected that they would be offset to some extent by the type of grant listed above, together with an adequate system of information and advice for parents and pupils. We note, however, that experience elsewhere indicates that the solution of such participation problems is very slow and may extend over more than one generation. The factors which are internal to the schools are bound up with questions of efficiency, hence it may be convenient at this juncture to turn to this third (and last) of our selected problem areas.

EFFICIENCY

12.60 The data of chapters 9 and 10 indicated that there was scope for achieving an improved use of resources in both first-level (national) schools and second-level (secondary and vocational) schools. Looked at in financial terms it may be said that there are substantial differences in costs as between different types of school and generally it was the smaller schools which were the more expensive. Looked at in terms of the participation problem it was seen that it was the pupils of smaller schools who made the slower progress at primary level, while at the post-primary level the smaller schools had a more restricted range of subjects available. Hence on both 'efficiency' and participation grounds there are reasons for examining whether an alternative distribution of schools would be more satisfactory.

12.61 **National Schools.** From many points of view the parish would appear to be a suitable unit on which to base a reorganisation of school size. This would not entail the promotion of unduly large schools. Parishes vary greatly as regards the number of pupils in them, as the following table shows. Some parishes[3] have less than 100 pupils—some of these have only one school and one teacher—while the largest parishes have over 1,000 pupils : the overall average is just under 500 pupils per parish. It will be seen however, that more than half of the parishes have less than 300 pupils, so that even if all the pupils in a parish were in the one school the enrolment would still be less than that required, on present regulations, for seven or eight teachers which would give one teacher for each grade. Of course one of the effects of re-organization would be to enable say seven or eight teachers to be made available for a smaller number of pupils—hypothetically, if the overall pupil/teacher ratio of 34.3 (Table 9.2) were to apply uniformly throughout, seven teachers would be available for 240 pupils. A re-organization of school size would of course make it easier to supply all schools with the necessary physical facilities and educational aids, as well as making it easier to give remedial attention to ' delayed ' pupils.

TABLE 12.8

Parishes by Number of National School Pupils, 1962/63

Number of Pupils	Number of Parishes
0—199	266
200—299	240
300—399	155
400—499	82
500—999	131
1,000 and over	98
TOTAL	972

12.62 It was suggested earlier (chapter 9) that the present pattern of national schools is largely the result of historical factors. A much larger rural population, coupled with a much lower degree of mobility owing to the lack of transport facilities, called forth a large number of schools. Declining population has led partly to a reduction in this number, but also to a reduction in the numbers of pupils attending the remaining schools, resulting in the large numbers of one and two-teacher schools.

12.63 Given the age-distribution of existing schools and the present policy regarding school building, it would seem that about 40 per cent of the total number would be replaced over the next 16 years. This percentage would be greater in rural areas. This would mean replacing an average of two schools per parish during that period, hence the possibility of introducing larger school units would appear to be feasible in the majority of cases.

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[3] This discussion refers only to Catholic parishes and pupils in Catholic schools.

12.64 It may also be observed that a movement towards larger schools would give some prospect of being able to implement the Council of Education target of a maximum class size of 40 pupils, in the not too distant future. This possibility would arise because the smaller schools are the ones with the lowest pupil/teacher ratios, hence the amalgamation of these small schools would make it possible to re-allocate teachers among schools so that the class sizes in the existing larger schools would be lowered.

12.65 The larger schools in rural areas might be introduced gradually as existing schools become obsolete. Alternatively, if this question were to be regarded as more urgent, steps somewhat along the following lines might be taken, where agreement could be reached among the parties concerned.

(1) All one-teacher schools in which the children in question can be accommodated in an adjacent acceptable school (i.e. one which is within transportable distance and is of the same denomination) might be closed.

(2) In any parish in which there is one or more obsolete schools, all schools in the parish could be investigated. Schools which either were obsolete or were likely to become obsolete before 1980, and in addition, all one or two-teacher schools built before 1900, might be replaced either by one new school building or by extensions to existing schools as appropriate. A systematic investigation procedure could be adopted; for example, the situation in those parishes in which at present two or more schools were either obsolete or built before 1900, or both, could be investigated initially. In any parish in which only one two-teacher school is involved (on the basis of the criteria stated above), the obsolete school could be replaced by extensions to an existing school.

(3) Sufficient classrooms might be built in areas in which there are overcrowded classes to accommodate the projected number of pupils in these areas on the standard of 40 pupils per classroom as a maximum. The rules could be changed to authorize teachers at a maximum pupil/teacher ratio of 40 to give an incentive to overcrowded schools to build the necessary classrooms. These extra classrooms would enable the teachers released by (1) and (2) above to be employed in the 'teacher deficit' areas.

12.66 In this matter of school re-organization, there are a number of different 'strategies' or courses of action which could be adopted.

A major difficulty in choosing the most suitable strategy lies in the practical problem of evaluating the effects of a particular strategy, given the size and complexity of the problem. Such an evaluation could be so tedious and time-consuming as to be impracticable. To render these problems of decision-making more manageable we have organized the data so that various strategies can be readily evaluated by computer—all the relevant data on national schools have been put on punch cards for this purpose. We give below, for purpose of illustration, the results of one particular strategy which we had evaluated in this way. The parish was adopted as a unit and within each parish schools were classified as obsolete or non-obsolete. These tabulations excluded some categories of schools e.g. Protestant schools, special schools etc. The strategy tested involved (i) closing all of the obsolete schools and transferring the pupils to another (where necessary a new) school in the same parish and (ii) transferring pupils from overcrowded classrooms, in both cases on the basis of having not more than 40 pupils per classroom and of having one teacher per room.

12.67 The results were as follows. A total of 1,886 classrooms were obsolete but only 978 rooms would be needed to replace these under the proposed strategy. The number of new rooms which would be required to eliminate all existing classes of more than 40 pupils was 411. A total of 1,389 rooms would, therefore, be sufficient to achieve both aims of the strategy. Thus the net saving would be 497 rooms (and note that this would also achieve a maximum of 40 pupils per room—all rooms needed for overcrowded schools are included). In the case of teachers, the number who would be ' released ' would be 1,757, while the extra number required to reduce over-size classes would be 532. Thus while achieving the target of not more than 40 pupils per teacher, there would be a net 1,225 teachers available to reduce classes still further.

12.68 The savings would thus be substantial. Assuming that the full saving in teachers is taken to be 2,300 i.e., a reduction of 1,225 compared with an increase of more than 1,000 to achieve a maximum class size of 40 with the existing policies, then the value of this saving would be £1.6 million annually in terms of 1961/62 salaries and more if current salaries are used. There would also be a capital saving of approximately £2.5 million because of the smaller number of rooms required. There would of course be increased spending on transport to be offset against these savings, since the provision of transport would be a prerequisite of any scheme for larger schools. We have not calculated such costs in detail but they are unlikely to exceed £500,000 in terms of 1961/62 costs. Since the long-run expectation would be that teacher costs would rise faster than transport costs it would seem that the value of savings on current expenditure should increase with the passage of time.

12.69 The data and tabulations relating to this 'strategy' have been made available to the Department. The consequences of other 'strategies' e.g. of replacing all obsolete *and* one-teacher schools, could be considered in a similar way.

12.70 It would in addition, be consistent with the evidence of earlier chapters that larger schools would have a favourable effect on the benefits derived by pupils. The arguments we have put forward for seeking a re-organization of school size are mainly on economic grounds. It seems to us not unlikely, however, that the weight of argument on the educational side will be such as to complement our arguments.

12.71 **Post-primary Schools.** Associated with the problem of securing an improved participation pattern, in the sense of adequate access to subjects and facilities, is the problem of the efficient use of scarce resources in post-primary education. This problem will be particularly acute at junior cycle level if several educational divisions (i.e. national, secondary, vocational and comprehensive) are catering for the same age group (12-15). Among the most scarce resources in Irish post-primary education are: (i) certain kinds of teachers, (ii) certain kinds of relatively expensive equipment such as (a) science laboratories, (b) language laboratories, (c) film projectors, teaching machines and similar equipment, (d) metal and woodworking shops, (e) libraries. It would appear that at the present time the kinds of teachers who are scarce are graduate teachers of (a) mathematics, (b) science, (c) rural science, (d) modern languages and (e) metalwork and engineering teachers. Some of these shortages are more acute in the case of women (e.g. mathematics) or men (e.g. modern languages).

12.72 On the other hand where such resources exist they are frequently not effectively utilized. This applies both to teachers and equipment. As regards equipment it is frequently due to the small numbers of pupils who have direct access to it and to a series of conventions and regulations preventing or discouraging wider utilization of these facilities.

12.73 As has been seen earlier, there are now about 853 post-primary schools (secondary, secondary top and vocational) in the country (and the number is rising appreciably) for a total number of about 125,000 full-time second level students or an average of about 125 pupils per institution. Of these pupils about 100,000 are junior cycle and 25,000 are senior cycle pupils. The provision of specialist teachers in the subjects mentioned for all of these institutions and the provision of adequate physical facilities and equipment would be a difficult task requiring not only substantial financial expenditure but also significant alterations in the whole educational pattern. As the problem of resource allocation in large towns and cities seems to be fundamentally different from those in small centres they may be considered separately.

12.74 Of the 853 or so post-primary schools mentioned, about 525 are in or adjacent to one or other of the 100 or so towns with population over 1,500. These schools cater for 70,000 junior cycle and 20,000 senior cycle pupils or 70 per cent and 80 per cent of these types of pupils respectively and 75 per cent of all post-primary pupils. In the case of these pupils administrative changes could increase considerably the numbers of pupils, who would come into contact with, and benefit from, existing resources in these scarce categories. Some of the possibilities which exist are indicated in the following paragraphs.

12.75 The utilisation of post-primary teachers in any area might be made more effective if hours spent by them in any (approved) post-primary school could count towards the fulfilment of their working periods, rather than the present system which restricts them to specific types of schools.

12.76 It is recognised that such a measure might imply the creation of a unified group of post-primary teachers. This would clearly be a major institutional change. Whether it will ultimately be necessary or desirable is not for us to say. The continuance of present arrangements however, is likely to result either in inadequate teaching services for some pupils and subjects or in significant expenditure increases if comparable teaching services are to be provided for all pupils.

12.77 To increase the effectiveness with which scarce categories of teachers are used there may also be scope for considering the payment of allowances in respect of such teachers, based on the proportion of their time which is spent on subjects in which they are highly qualified. This would provide an inducement to see that their time was most effectively spent. It is noted that a special allowance is at present paid to secondary schools who employ science graduates to teach science.

12.78 In respect of each type of physical resource, it might be feasible to establish in one school or building in each area, facilities such as an adequately equipped laboratory, the number of places being calculated on (1) the number of all pupils in the centre using such equipment, (2) the amount of time needed to be spent per week by each pupil and (3) a very high rate of utilization—if necessary going outside conventional school hours—of expensive capital equipment. It would not be necessary to have all of the physical equipment in a single school in the area : it would be necessary, of course, that a school housing equipment should make the facilities available to pupils of all other schools in the area.

12.79 The initiative in developing the co-operation necessary to qualify for the provision of such equipment could come from the individual schools in various centres. Schools in the area which did not wish to participate would of course be quite free not to, but additional subsidies for establishing such facilities would not be paid to them where that would lead to unnecessary duplication.

12.80 In conclusion, it may be observed that the possibility of amalgamating existing facilities in many centres, while it would help to resolve some of the difficulties, has not been adverted to in the foregoing discussion since we were not in a position to assess the practical possibilities.

12.81 In the case of smaller centres, which account for about two-fifths of the schools and one-quarter of the pupils, it has been shown already that the problem of developing the existing rather fragmentary provision of post-primary facilities is a complex one. Its solution would appear to involve a considerable re-organization of the existing system going far beyond the type of administrative changes outlined above for the larger centres, which are designed to facilitate improved use of specialist resources (either teachers or equipment) while maintaining the present pattern of separate provision for different groups of pupils on the basis of various criteria. However, pending a full scale review of the necessary organizational changes, and to some extent independently of any such changes, it might be possible to make specialized resources available to pupils in these centres by adopting a flexible approach to the problem. In particular, the use of itinerant teachers (already in use in the vocational system) and mobile equipment might contribute to a solution of the problem. Similarly the use of teaching machines with suitable programmes might be investigated. Such aids would of course need to be tried out in carefully observed experimental conditions and scientifically evaluated before they would be made available generally. The main burden of the solution in these centres, however, would appear to rest on major organizational changes.

12.82 Assuming that some adequate pattern of post-primary facilities can be made available to all pupils, whether along the lines suggested above, or on some other basis, it might be expected that this would contribute to a solution of the participation problem noted earlier, while at the same time producing a more efficient pattern of resource utilization in post-primary schools.

FINANCE

12.83 There are many other aspects of education which would merit discussion and consideration, whether the primary interest is manpower, participation or efficiency. The above discussions are in no way intended to be comprehensive, but rather to illustrate the type of problem involved. Before concluding this brief examination it may be appropriate to indicate some of the scope for reorganization in the area of finance. The one factor common to many of the earlier suggestions was that they would each cost a substantial amount, hence financial arrangements are clearly of some importance.

12.84 The brief discussion in chapter 11 suggested that the greatest scope for reviewing financing methods lay in the fields of post-primary and university education. It was noted that existing arrangements confer an automatic subsidy on all aided post-primary and university pupils, while a second subsidy is in effect conferred on pupils whose families are in a position to benefit from income-tax concessions.

12.85 Taking first the case of scholarships for post-primary schools the earlier discussion in chapter 11 suggested that if in fact the aim of such scholarships is to provide some form of equality of opportunity, there may be grounds for altering their form and, in particular allowing their value to vary with the circumstances of each family, along the lines suggested earlier.

12.86 In the case of secondary schools there may be scope for a more extensive re-arrangement of financing. The total number of pupils with scholarships in 1963/64 was just under 5,000 or less than 6 per cent of secondary school pupils while total scholarship expenditure at a maximum of £360,000 annually is of the order of 7 to 8 per cent of state spending on secondary schools. Accordingly, the opportunity might be taken to broaden the scope of scholarship schemes, while at the same time furthering other objectives in this field. For instance, the present system of capitation grants is in effect a scholarship awarded to every pupil, without regard to ability and without any assessment of his needs. If the payment of those grants (£1.3 million in 1964/65) were to be related to individual circumstances as visualized above for the scholarship scheme proper, it would enable a substantial increase to take place in the amount of money so allocated.

12.87 Another possible variation in the financing would be to abolish the present income-tax relief for children of 16 and over, who remain in full-time education,[6] and use the moneys so obtained for financing more scholarships (or other educational facilities if necessary). The tax remission is of course only applicable to those secondary school pupils over 16, whose parents have a certain level of income. The precise amount involved is not known,[7] but if for illustrative purposes it is assumed that say half of leaving certificate pupils are affected by this concession i.e. 10,000 pupils approximately, and if the saving is taken at £30 per pupil (more if the parent is a sur-tax payer) then £300,000 would be made available at the present time, and this amount would increase both as the number of pupils grew and as the average income of parents rises, assuming that income tax allowances did not increase by the same amount. This suggestion, however, which is prompted by the desirability of widening educational participation, would require to be considered in the context of the present incidence of taxation in general.

12.88 A further possibility is that there would be a system of variable capitation grants, primarily with the object of ensuring that at least some secondary schools in each area would provide their facilities at a low fee, and secondly, with the object of equalising expenditure per pupil. Some aspects of the first of these objects have been discussed above. As regards the second, the present system of equal capitation grants for all pupils means that schools which charge higher fees are in a position to provide better educational facilities—a wider curriculum, better library facilities and so forth. Hence, in order to reduce to some extent the disparity in educational opportunities, there might be scope for varying the capitation grant inversely with the fee level of the schools, so that the lower the fee the higher the grant—between certain limits. In the case of boarding schools, a separate grant scale would be required, but this could be constructed from data such as that contained in Appendix V on fee levels, which would enable boarding fee ranges corresponding to day fee levels to be defined. At present the Department does not collect information on fees in secondary schools in general. The definition of fees, as between basic fees and extras, might cause some initial difficulties.

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[6] The relief is given in respect of all children up to 16 years of age, whether at school or not.

[7] In 1961/62 the total relief granted in respect of children amounted to £10·2 million (Statistical Abstract, 1964).

12.89 In the case of vocational schools similar remarks might apply to their scholarship schemes. There are, however, other problems in regard to them. One is the problem of striking the appropriate balance between central government and local authority finance. Since the Government have announced their intention of exploring alternative possibilities for local authority financing, it is not proposed to discuss this matter, but merely to note its existence.

12.90 In the case of universities and third-level generally, as with post-primary education it would seem that one change would be to have scholarships whose value varied with the circumstances of the students. It might also be preferable that they should be awarded on a national rather than on a county basis, to eliminate regional anomalies.

12.91 Again, it might be appropriate to consider the scope for re-arranging existing financing methods. The present system of block grants to the universities means that expenditure is virtually 'open-ended', that is, there is no effective limit to the amount which the State may be called upon to provide, since the numbers of pupils eligible for, and actually seeking, admission are expected to go on rising. This in effect means that the State automatically awards every student a scholarship, which at present has a value of £120 approximately per annum. There might be grounds for converting such funds into a mixture of scholarships and grants with the object of specifying conditions (such as scholastic attainment and/or family income), to be satisfied before any award was payable either to the pupil or to the college. Students who did not satisfy those conditions, might be asked to pay the full cost of their courses. The position as regards students from abroad, other than from the emergent countries, would arise for consideration in this context. It might be expected that this would enable the State to set limits as to the amount it was committed to spend on university education, while at the same time ensuring a more equitable pattern of participation.

12.92 The question of loan schemes has not been adverted to in this discussion. While such schemes operate in some countries, preliminary investigation showed that problems attached to them. Any suggestion for a scheme, if it were to be appropriate to Irish conditions, would require careful examination.

12.93 These then are some of the possibilities. It is not suggested that any or all of them might be introduced. This would depend on the objectives which the State wishes to achieve by its expenditure. Nor is it suggested that the present system is without merit. For while the present method does have the effect of subsidising a relatively wealthier sector of the community, it also has some effect in stimulating participation on the part of this group. However, it would seem somewhat anomalous to continue such subsidies unless some comparable effort were made to increase participation on the part of poorer groups.

CONCLUSION

12.94 This chapter has attempted to illustrate the types of problem, and some possible solutions, which suggest themselves as a result of the investigations reported on in the earlier chapters. They are in no way intended to be recommendations as to future policy. Our intention has rather been to illustrate that there are and no doubt will continue to be many problems in the educational sphere. To frame adequate solutions to those problems is no easy task. We would, however, hope our efforts show that the collection of adequate data, and its systematic analysis, is an important and useful step in the formulation of such solutions.

12.95 A second intention has been to illustrate the interdependence which exists both as between the various parts of the educational sector itself and between this sector and the rest of economy. We would hope that the considerations advanced in this chapter show the limitations of any policy which would seek to remedy specific problems in isolation, without adequate regard for the repercussions of such actions in related areas.

12.96 These are the limited objectives of the foregoing discussion. There are many other aspects of education which would warrant attention, but we must leave the task of detailed analysis to our successors. Thus on the primary side there are the questions of the allocation of pupil time in national schools, and the recognition in the development of school programmes that many rural children may have to live their adult lives in an urban environment. There is also the important problem of identifying those children in national schools who, for whatever reason, derive little or no benefit from the programme and the development of appropriate remedial measures. A study of the purposes and design of examinations at this level would also seem to merit attention.

12.97 In regard to post-primary education, a major problem is the use of resources in a flexible and efficient manner, with a view to ensuring that children have a range of choice appropriate to their particular talents and aptitudes, available to them in their locality or catchment area. Under present day conditions there is also a need to keep abreast of new knowledge by adjusting curricula as required and keeping teachers up to date in their subjects. Other matters calling for attention are the provision of more teachers of 'scarce' subjects, the re-allocation of pupil time to achieve a more appropriate balance between the various subjects, the application of modern technological developments e.g. teaching machines, television, the need for career guidance and the integration of secondary top schools into the general framework of post-primary education.

12.98 In the field of technical education, an immediate and pressing problem is the provision of suitable courses for very small and scattered numbers of apprentices in certain trades. We understand that An Chéard-Chomhairle (The National Apprenticeship Board) are devising means of overcoming the problems involved, but similar difficulties exist in regard to technicians. In these areas also there are problems of training and qualification. There would seem to be a need for the establishment of nationally recognised certificates and diplomas and the strengthening and further development on a continuing basis of co-operation with industry.

12.99 At the third level, apart from the universities whose problems are being examined by the Commission on Higher Education, there is the important field of the teacher training colleges. Here there arises the question of the evaluation of curricula, especially the place of mathematics, and the strengthening of procedures for reviewing the approach to subjects in tune with new developments.

12.100 Other topics that came to our notice are the provision of post-primary facilities for religious minorities and also for those who desire to have Irish as the normal medium of instruction for their courses, the provision of appropriate facilities for pupils in industrial schools and the problem of education for the mentally handicapped. In this case of course, the Report of the Commission on Mental Handicap has recently been issued.

12.101 It is appropriate to refer at this stage to the question of agricultural education. We were not able in the time at our disposal to examine this question in an analytical way but we had the benefit of discussion with officials of the Department of Agriculture on the crucial importance of this aspect of education in Irish conditions. Important questions here would seem to be at what stage and in what manner general education might best be attuned to the special needs of the agricultural community so that a firm basis might be provided for further technical education, and the development and strengthening of appropriate forms of technical education and training. There is clearly a fruitful field here for co-operation between the Departments of Education and Agriculture.

12.102 These are some of the more important topics that came to our notice. The list might be continued, but is sufficient to show the extent of the problem areas. The fact that we have not examined these problems in detail is not to be taken as an indication that we think they are unimportant. On the contrary we feel that any policy which neglected them would be inadequate. However, given the limited time and resources at our disposal we could not hope to be comprehensive in our coverage. Nevertheless we would hope that our efforts would assist in the formulation of objectives and priorities in the educational sector. This in turn would facilitate the articulation of acceptable and efficient solutions for these many problems.

TABLE 12.9

Percentage Distribution of National School Pupils (aged 11) *by Distance of National School from nearest (a) Secondary, (b) Vocational or (c) any Post-primary School, by Sex* 1962/3

	BOYS			GIRLS		
Distance from Nearest Post-Primary School	Type of Post-Primary School					
	(*a*) Secondary School taking day Boys	(*b*) Vocational School	(*c*) Nearer of (*a*) or (*b*)	(*a*) Secondary School taking day Girls	(*b*) Vocational School	(*c*) Nearer of (*a*) or (*b*)
Miles	Percentage Distribution					
Less than 1 mile...	50·2	53·1	55·1	54·9	54·3	58·1
1 mile, less than 5	11·2	14·5	16·1	12·2	13·5	15·4
5 miles, less than 10	24·1	25·4	23·9	22·7	25·2	22·4
10 „ „ „ 15	10·0	5·5	3·9	7·1	5·5	3·3
15 „ „ „ 20	2·8	0·9	0·7	1·8	1·0	0·6
20 „ „ „ 25	0·6	0·3	0·1	0·4	0·2	0·0
25 „ „ „ 30	0·2	0·1	0·0	0·2	0·1	0·0
30 miles and over	0·9	0·2	0·2	0·7	0·2	0·2
TOTAL ...	100·0	100·0	100·0	100·0	100·0	100·0

TABLE 12.10

Catchment Areas, based on Existing Post-Primary Schools, Classified by Number of Pupils in National Schools[1] *in the Area,* 1962/63

(*a*) Catchment areas based on Secondary Schools taking day boys, by province[2]

Province	Number of Pupils in Catchment Area													
	Under 300	300–449	450–599	600–749	750–899	900–1049	1050–1199	1200–1349	1350–1499	1500–1649	1650–1799	1800–1949	Over 1950	TOTAL
	Number of Catchment Areas													
Leinster	2	—	1	3	4	—	3	2	3	—	2	3	34	57
Munster	4	4	6	3	3	3	4	6	3	4	4	3	24	71
Connacht	1	2	2	2	3	2	5	2	3	3	—	6	11	42
Ulster	—	—	—	—	—	1	2	—	1	2	2	—	7	15
TOTAL ...	7	6	9	8	10	6	14	10	10	9	8	12	76	185

(*b*) Catchment areas based on Secondary Schools taking day girls, by province[2]

Province	Number of Pupils in Catchment Area													
	Under 300	300–449	450–599	600–749	750–899	900–1049	1050–1199	1200–1349	1350–1499	1500–1649	1650–1799	1800–1949	Over 1950	TOTAL
	Number of Catchment Areas													
Leinster	4	4	2	4	11	2	6	6	3	1	3	2	25	73
Munster	2	10	8	10	8	7	7	7	3	5	4	2	18	91
Connacht	5	3	7	1	8	7	6	4	4	4	2	2	8	61
Ulster	—	—	—	—	—	1	1	—	2	4	1	—	7	16
TOTAL ...	11	17	17	15	27	17	20	17	12	14	10	6	58	241

(*c*) Catchment areas based on Vocational Schools, by province

Province	Number of Pupils in Catchment Area													
	Under 300	300–449	450–599	600–749	750–899	900–1049	1050–1199	1200–1349	1350–1499	1500–1649	1650–1799	1800–1949	Over 1950	TOTAL
	Number of Catchment Areas													
Leinster	6	6	10	8	10	6	3	6	4	—	4	4	18	85
Munster	5	5	3	2	8	6	4	6	5	1	8	3	20	76
Connacht	2	5	4	4	3	1	6	4	2	3	2	1	11	48
Ulster	3	2	—	1	1	1	4	3	2	1	1	—	6	25
TOTAL ...	16	18	17	15	22	14	17	19	13	5	15	8	55	234

[1] Excluding Protestant schools and special schools.

[2] In the case of boys' and girls' secondary schools, which are single-sex schools, the size of the catchment area would be half that shown in the table.

CHAPTER THIRTEEN

Recommendations for Reorganisation in the Department of Education

13.1 At present educational systems are being consciously planned in many countries, and the need for planning is felt even where the means of practising it have not yet been designed. All over the world education is being sought more eagerly than ever; and new demands are increasingly being made for more education and for improvements in its quality. In order to have the resources needed to provide this education, however, a country must seek in designing its educational system to satisfy, among other things, the manpower needs of the future. If the range and levels of skills required to convert economic potential into economic achievements are not available a country is unlikely to have the resources needed to provide education of the quality and variety that is being increasingly demanded. As education is at once a cause and a consequence of economic growth, economic planning is incomplete without educational planning. Education, as well as having its own intrinsic values, is a necessary element in economic development.

13.2 Our survey and analysis of the Irish educational system in this Report lead to the conclusion that machinery should be set up in the Department of Education to continue the kind of work that this survey has begun.

13.3 The present survey should be seen as a beginning rather than an end; the efforts of the survey team over the past three years should be seen as a starting point of an operation which in future should involve a continuous review of the educational system. The existence of machinery for this work could transform the Department of Education into a development corporation in its own sphere. This shift in emphasis from ordinary administration to active development would also accord more with the positive and dynamic outlook required for the success of the Second Programme for Economic Expansion and of the later economic programmes that will inevitably follow after 1970. In this way the Department of Education might set an example as a development corporation, which, if successful, might be followed by other supply Departments.

13.4 It is not necessary to be able to measure precisely the contribution of education to economic growth in order to recognise the significance of education in economic development. Moreover, the educational system in all its branches may be regarded as one of the biggest industries and certainly the most important, in the country. On the human side it employs many thousands of university and other third level graduates; in terms of material resources the educational building programme alone is of great magnitude. Because of the scale of human and material resources involved, if for no other reason, these resources should be allocated in the most rational way. It will be evident, then, that there are few administrative areas in Ireland where decision-making can have more far-reaching and long-term implications than in the Department of Education. The information, therefore, on which decisions are based should be as accurate, as complete and as up-to-date as possible. The process of assembling, selecting and interpreting this information before decisions are taken is a most highly skilled and crucial one; it is also a task which admirably lends itself to modern methods of data processing. The professional personnel undertaking this systematic collection, analysis and evaluation of data should form an integral institutional part of the Department of Education and be in no sense a mere statistical adjunct to it or an advisory body.

13.5 The case for an educational development unit doing this work within the Department of Education can be easily summarized. The survey that we have carried out indicated various problems in the Irish educational system. A development unit is, in our opinion, the only satisfactory operational method by which those responsible for decisions about educational policy can take these decisions in the full knowledge that all the available and relevant facts are assembled and understood, and that the implications of decisions are appreciated before decisions are taken. The character of the educational system must have regard to a variety of changes in the demand for education and to the qualitative no less than to the quantitative nature of this demand. The composition of curricula should, for instance, be responsive to new situations. Moreover, there are, of course, social considerations to be taken into account as well as the demands of the economic system. The structure of the educational system will also be influenced by changes in demographic structure, in national social objectives and by the impact of new knowledge. The system is, therefore, confronted with a continuous need to adapt itself to changing circumstances and changing demands. It is our belief that all this can be solved more easily if policy makers have an educational development unit at their disposal as an organic part of the machinery of the Department of Education.[1] The unit would supplement, and in no way supplant, the existing administrative branches of the Department. The purpose of our recommendation would be defeated if the unit impaired in any way the normal administrative functioning of these branches. The work of the branches would, however, be facilitated by expert planning appraisal, and a greater co-ordination and, perhaps, harmonisation of branch activities could be achieved than is possible at present.

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[1] A chart in Annexe F illustrates the inter-relationships between some of the processes involved in educational decision-making and some of the tasks of a development unit.

13.6 It is not necessary to give an exhaustive list of the specific tasks with which the suggested development unit would be charged. The main kinds of tasks may, however, be indicated. In general, the unit would be concerned with the long-term planning of education. It would be responsible for educational statistics and their publication, and for forecasting the developments of the educational system e.g. the outflow from schools and colleges of qualified people at the various levels of education. It would evaluate the implications of these forecasts and undertake strategy analysis as well as the systematic investigation of the effects of selected strategies, including the organisation of appropriate surveys. It would offer pointers to different paths for achieving the same objectives. It would engage in regular consultation with employers of the pupils and students prepared by the educational system. In general, the unit would be responsible for keeping policy makers informed of the effectiveness of the educational system in attaining defined objectives and in securing optimal use of the human and material resources employed in education.

13.7 The proposed unit should be given the authority to run the statistics-intelligence service of the Department of Education, including the provision of an up-to-date library service as part of what is known in other countries as a Documentation Centre. It would define the kind of data to be collected from schools or from other sources such as *ad hoc* surveys. Since the unit would depend on the schools as its main source of data it would need to achieve an understanding with the school authorities on the aims of its enquiries. The unit would, of course, be charged with executive authority for the actual office work on the analysis of the results. In course of time when modern data processing methods, such as the utilisation of the electronic computer, come to be applied to the Department's work, the development unit should be made responsible for their development and should supervise the integration into the system of the ordinary accounting work, the compilation of examination results and other similar routine Departmental activities. While not engaging specifically in pedagogical research, the unit would promote, encourage and assist such activities and take cognisance of their results.

13.8 The flow of information between the schools and the development unit would ideally be a two-way flow. There are many interested persons, whether inside or outside the Department—parents, teachers, school authorities, inspectors etc.—who have hitherto been unable to develop their ideas and interests because of a lack of statistical data and advice. We envisage that the proposed unit would be a focus of such interest, encouraging and aiding their activities. In this way it would help also to promote a forum of critical opinion in our own country. This of course would involve some change in traditional governmental attitudes. For one thing the Department would have to be resigned to the fact that, initially at any rate, the data it supplies may be used in criticism of its past performance. The courage and vision required to make this change is unlikely, however, to go unrewarded either in terms of public opinion or of the resulting flow of ideas.

13.9 At present the Department of Education exercises no function in relation to the non-aided schools and collects no information from them. Thanks to the co-operation of the schools, however, we were able in the course of our survey to assemble some data. For general educational planning it would, of course, be necessary systematically and regularly to secure information on these schools and we recommend that the necessary steps should be taken towards this end. This statistical requirement need in no way impair the independence of these schools.

13.10 Educational planning, as already suggested, must, of course, be closely related to economic planning. Both types of planning imply the existence of demographic forecasts and manpower forecasts. A choice of demographic forecasts based on different assumptions should be produced and reviewed regularly; one of these forecasts should be selected for administrative decision-making purposes in all branches of the public sector of the economy generally. We believe that neither demographic nor general manpower forecasting should be functions of the Department of Education.

13.11 In our opinion there should be created in the Department of Education a new post of Assistant Secretary, the occupant of which would be directly responsible to the Secretary of the Department for long-term planning work, for considering policy matters in general and, in particular, to be responsible for directing the findings of the professional staff of the development unit into the administrative system of the Department. This officer should, of course, have considerable experience in educational matters and a capacity for administration at a high level. But, equally necessarily, he would require special qualities for the new challenging task of being responsible for an educational development unit staffed by professional personnel. He should have an independent, enquiring, critical, creative mind, a thorough acquaintance with educational theory and practice and an appreciation of the need for a quantitative approach where this is applicable. He should have the virtue of detachment to a very high degree and a lack of commitment to the status quo.

13.12 Under the Assistant Secretary, the professional head of the development unit should be a first-class statistician who, ideally, should have considerable administrative experience as well. His standing should be such as to command adequate consideration for his views and those of his unit in the criticism and development of policy and to secure adequate staff for his work. In addition, the services of at least one full-time economist would be required. A third member should be an inspector of schools. We are of the opinion that it would be best if the inspector were seconded to the unit for a period of say two years so that he would have time to become fully acquainted with the work of the unit, appreciate its significance and see projects to fruition. In this way inspectors from all branches of the Department could in rotation have experience of the unit's work, give it the benefit of their knowledge and experience and, in course of time, bring back to their normal duties as inspectors an enhanced understanding of the functions and purpose of educational planning and development as an activity. A fourth professional member of the unit should possess skills in the application of quantitative methods to decision-making processes, including such activities as cost benefit analysis, operations research and data processing by modern methods. To complete the professional personnel of the unit a sociologist would be needed. We feel that members of the development unit should be associated with the institutional arrangements responsible for manpower forecasting and for advising on manpower policy. It will be apparent from our report that manpower policy and educational policy cannot be considered independently. There should be close links established between he unit and the Office of Public Works so as to ensure coordination and expedition in the planning of school construction. The co-operation envisaged in paragraph 13.8 would of course mean contact with school and teacher organizations. It is unlikely, however, that it would be possible to arrange for a teacher for example, actually to serve as a member of the unit.

13.13 A small but essential secretariat should be at the disposal of the professional members of the unit and take its instructions directly from the unit. It is necessary to emphasise, however, that the presentation of the results of the professional work of the development unit should remain in professional hands right up to the point at which they enter the administrative machinery of the Department.

13.14 We are also of opinion that the Assistant Secretary responsible for educational development would be greatly assisted in his work if he had the benefit of consultation periodically with an advisory committee consisting of representatives of the Government Departments responsible for economic programming, the National Industrial Economic Council and the Director of Statistics.

CHAPTER FOURTEEN

Aiding Educational Development in the Emergent Countries

14.1 We were charged in our terms of reference with considering how and to what extent Ireland might contribute towards the educational effort of the emergent countries. By this we were in effect asked to suggest how this country might frame a long-term programme under which it would voluntarily and deliberately invest a portion of its national income in overseas aid. This is a practical recognition that, though a developing nation itself, Ireland nevertheless has obligations towards countries whose development problems are at once so formidable and so urgent. The developing areas, mainly Africa, Asia and Latin America, are marked by low levels of participation in education and by an almost universal desire to raise those levels as quickly as possible. All the indications, however, are that realisation will lag far behind aspiration. Income levels in such regions are low, in many cases extremely low, and this means that the increase in resources that can be devoted to education is small, and that the claims on any additional resources are very great, so that more education may mean foregoing better medical standards, better housing, better communications or even more food.

14.2 The wealthier and more developed countries have, of course, assisted the emergent countries in their efforts to improve their educational conditions. There remain, however, great shortages of personnel and materials. It has been suggested,[1] for instance, that in some emergent regions student numbers would need to rise three or even four-fold between 1958 and 1970. Table 14.1 summarises these estimates.

14.3 The figures in Tables 14.1 and 14.2 should not be regarded as showing the exact needs of these areas, but rather as indicators of the magnitude of the problem. Against this perspective it will be seen that any contribution from Ireland must be modest. If, however, the scale of Ireland's effort is to be small in comparison with the size of the effort needed, there has, nevertheless been a tradition of Irish personnel, mainly missionaries, teaching in some of these countries

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[1] **OECD. Policy Conference on Economic Growth and Investment in Education (Washington 1961). Vol. III p. 71 *et seq.***

TABLE 14.1

Emergent Countries: Student Numbers in 1958 *and Target Figures for* 1970
(*in thousands*)

	Second Level				Third Level			
	General		Vocational		Total		of which Science and Technology	
	1958	1970	1958	1970	1958	1970	1958	1970
Africa	960	2,400	260	630	170	380	36	130
Asia	12,340	20,110	740	1,890	1,500	3,070	410	1,050
Latin America ..	1,710	3,730	880	1,520	520	1,070	85	230
TOTAL ..	15,010	26,240	1,880	4,040	2,190	4,520	531	1,410

Source: O.E.C.D. Policy Conference on Economic Growth and Investment in Education (Washington 1961). Vol. III p. 71 *et seq.*

TABLE 14.2

Emergent Countries: Teacher Numbers in 1958 *and Target Figures for* 1970
(*in thousands*)

	Second Level		Third Level[1]	
	1958	1970	1958	1970
Africa	82	140	7	18
Asia	553	850	32	84
Latin America.. ..	205	290	45	63
TOTAL ..	840	1,280	84	165

[1] Excluding teacher training institutions.

Source: O.E.C.D. Policy Conference on Economic Growth and Investment in Education (Washington 1961) Vol. III p. 71 *et seq.*

and of students from these areas enrolling in Irish schools and universities.

14.4 In considering how existing Irish efforts might be supplemented it became clear that an expert appraisal of the educational needs of emergent countries would be necessary before any recommendation could be made as to how Irish assistance might most effectively be deployed in those areas. We were not in a position to make this appraisal. We feel that the task is one which should be undertaken by specialists in the educational problems of emergent countries preferably under the aegis of an international body such as UNESCO. After such an appraisal it should be possible for the Irish authorities to decide what form their assistance might take in order that it should be used to the best advantage of the recipient countries.

We have not, therefore, been able to give the problem the attention that it deserves. Pending such an analysis of the problem we have had to content ourselves here with discussing some general considerations and suggestions without being able to assess adequately their financial and other implications. Owing to the urgency of the problem it was thought better to make a beginning in this way in the hope that this discussion will draw attention to the magnitude of the challenge that faces us in this field, and that it will stimulate fruitful thought and effort.

14.5 It may be useful to begin with an outline of the existing Irish efforts in this field. These fall into two main categories; firstly numbers of Irish personnel are teaching in these countries and secondly numbers of students from these areas are enrolled at Irish educational establishments. Data on the first of these are difficult to obtain. No details of country of destination, or of occupation, are available for Irish personnel going abroad. Even if such data were available, they would relate only to first destination, which might be merely a transitional stop, not a final destination as regards either country or occupation. One source of information may, however, be the Catholic Religious Orders, which have many members teaching in the emergent countries. The following table is based on estimates of the numbers so engaged in 1962 on the continent of Africa.

TABLE 14.3

Estimated Number of Irish Religious who were teaching in Africa in 1962

Type of School or College	Number	
	Priests and Brothers	Nuns
Primary	130	220
Secondary	220	200
Teacher Training	70	80
Technical and Professional ..	100	40
Medical Training	—	100
Other	40	10
TOTAL ..	560	650

Source: Data supplied to Department.

14.6 It will be seen that the numbers, though modest in relation to the needs of the area concerned, are significant in relation to the domestic teaching force in Ireland. The partial nature of these numbers should also be noted. They deal solely with members of Catholic Religious Orders; members of other religious denominations are not included, nor are lay persons. Again, the figures relate only to one continent, not to underdeveloped areas generally.

14.7 It is difficult to assess how significant these other numbers might be, though it is probable that they are less than those given in the above table. Up to the present there was no established tradition of lay teachers going to the underdeveloped areas; it is believed that teachers who emigrate from Ireland have in the past gone mainly to the United Kingdom or North America, though it is possible that in the case of university staff small numbers may have gone to Africa or Asia. It is probable that the numbers of religious in other developing countries fall short of those in Africa. This is partly a result of historical and linguistic circumstances—Africa was being explored and opened to outsiders at a time when Ireland, after a lull of many centuries, was again emerging as a missionary country. The fact that English was the major colonising language there meant that Irish missionaries were attracted to Africa. The only other areas where the same considerations of language applied were India, Malaya, Burma and parts of China on the Asian continent, and Australia. Since then, Australia is not regarded as an emergent country in that sense and China has been closed to missionaries for some years; leaving India, Malaya and Burma as the major sectors. While there has been and still are missionary efforts directed at these areas, it would appear that the major effort has been directed towards Africa. The other principal underdeveloped area—Latin America—has not hitherto been the focus of any significant effort, partly perhaps as a result of language difficulties, but this position may alter as a result of recent Papal appeals. The educational efforts of Irish religious of other denominations follow much the same pattern as the Catholic missionaries.

14.8 The second aspect of educational interchange, concerns the numbers of overseas students in Ireland. The following data were obtained for the academic year 1962/63.

TABLE 14.4

Overseas University Students in Ireland, by Area of Origin, 1962/63

Area of origin	Number of Students
Africa	626
Middle East	27
Far East	229
West Indies	151
Latin America	3
Oceania	1
TOTAL	1,037

Source: Information supplied to the Department of Education by the Universities.

Thus such students represented about 8 per cent of all full-time university students in Ireland. The distribution of these students by faculty is not available but the distribution of all students from outside the State (including those from the United Kingdom, of whom there were about 2,000) was as follows:

TABLE 14.5

University Students from outside the State, percentage distribution by Faculty, 1962/63

Faculty	Percentage Distribution
Medicine	57·2
Science	6·5
Arts	22·0
Agriculture	0·8
Architecture	0.8
Commerce	4·4
Engineering	1·4
Law	1·6
Veterinary Science	0·3
Miscellaneous	5·0
TOTAL	100·0

Source: Information supplied to the Department of Education by the Universities.

14.9 These numbers reflect in part the preceding comments regarding the areas in which Irish teachers operate abroad. The number of African students is the largest, followed by those from the Far East and the West Indies; the number from Latin America and other areas is much smaller. The major subject areas show the predominance of Medicine and Arts and the relatively small numbers in technological and scientific subjects. It is only fair to point out, however, that it is not known to what extent these figures reflect the preferences of the students, as distinct from the effect which entrance requirements have on the eligibility of students for various faculties. The table relates only to third level education, because data obtained from schools indicated that the numbers at other levels were negligible.

14.10 Finally, in regard to the educational links between Ireland and the emergent countries, it may be noted that they are the result of private initiatives, for the most part of religious motivation and influenced by linguistic and geographical factors and that they owe little to state incentives or political considerations.

14.11 How then might Ireland best continue—or preferably increase—its efforts in the coming years? The overriding consideration should be the needs of the areas themselves, which should determine the nature and relative scale of the effort; the size of the total effort being determined by domestic considerations. Domestic conditions should determine whether the Irish effort should, say, be the equivalent of 10 or 1,000 teachers per year. The needs of the countries concerned should as far as possible determine the level and subject areas in which these teachers should be, and whether it were better that teachers be sent to these countries or that overseas students should come to Ireland.

14.12 The needs of the countries concerned are, as is indicated by Tables 14.1 and 14.2, enormous in numerical terms. Generally speaking, it is probably correct to say that at second and third level the need is relatively greater in the scientific and technical areas. It was seen, however, from Table 14.5 that, apart from medicine, the numbers of foreign students studying in these fields were relatively low compared with arts subjects. Although data are not available, it is probable that the same relative emphasis holds for the composition of Irish teachers in these areas. Hence, a first target for future efforts might be to increase the scientific and technical proportion of such effort. In suggesting ways by which this might be achieved, it is also necessary to take account of the second consideration, whether Irish personnel should go abroad or whether overseas students should come to Ireland.

14.13 The answer to the second consideration will depend on several factors. First there are the level and subject area involved In the case of secondary education it would probably be cheaper to send Irish personnel abroad, since pupil/teacher ratios of the order of 30 : 1 are likely and transport costs alone would suggest a preference for the teacher going to the pupils rather than vice versa. In the case of third level education the situation is less clear-cut. In terms of travelling costs, since student/teacher ratios would be smaller, the cost disparity as between students coming to Ireland or Irish staff going abroad would be less pronounced, while the presence of different fee structures for such courses may affect the travel cost disadvantages of students coming to Ireland. The fees charged in Ireland are low, less than half the current costs of providing such courses, the remainder being mainly covered by state grants. Thus on average each university student is subsidised to a substantial degree—at the present time by about £120 annually. Given a continuance of this financing pattern, it might be cheaper in many cases from the viewpoint of the countries concerned to send their students to Ireland.

14.14 Costs, however, are not the only consideration. There are also the socio-political aspects to be taken into account. In emergent countries these may mean that the foundation of new universities or the expansion of existing ones may be awarded a high priority because they are regarded as tangible symbols of development, as are dams, highways, airlines or T.V. stations. There would still, however, be a valuable role for foreign study because the domestic universities would probably cater mainly for arts faculties, which are less expensive to maintain, and send students for the more expensive technological and scientific subjects to study abroad. Against this, there is the contention that if students in these areas are sent abroad, they, or rather the better ones among them, may be unlikely to return. They may be able to obtain very attractive posts abroad, with the result that only the most dedicated students will return home. There is also the consideration of the role which a university plays in the formation of community attitudes and leadership. Depriving universities of scientific faculties may lead to an unbalanced community attitude. It has been suggested in this regard by many writers that in those areas which were formerly European colonies, the highest social status was associated with government administrators, lawyers and arts graduates generally; thus the Ashby Commission (Nigeria) states that 'the literary tradition and the university degree have become indelible symbols of prestige in Nigeria; by contrast technology, agriculture and other practical subjects particularly at a sub-professional level, have not won esteem'. It is probable that the same observations also apply to other areas.

14.15 To change this situation, assuming the countries concerned wish to change it, will not be an easy task, but it may well be that selective use of foreign study may help in this process. Thus if there is prestige and status attached to foreign travel and study, governments could arrange for study abroad in subjects which they wish to encourage and domestic study for the remainder. While it is unlikely that emergent countries would wish to educate abroad all of their third-level students, it may still be in their interests to educate some of them in this way.

14.16 Given then that both forms of educational assistance—sending teaching staff abroad and bringing foreign students to Ireland—are likely to be needed, it remains to discuss how such efforts might be stimulated.

14.17 One suggestion might be that any additional Irish effort financed out of public funds might be directed mainly at one country or one region, rather than diffused over a wide area. This could help to stimulate interest in the needs of the particular region and by reducing the problem to a size where the effects of the Irish effort might be more easily appreciated, would render it more likely that something would be done, whereas if the problem were left vague a feeling of helplessness and of the insufficiency of any possible Irish efforts might prevail. Such a scheme would preferably be organised in conjunction with such an international body as UNESCO. A parallel for this approach is the scheme adopted by the F.A.O. in its Freedom from Hunger Campaign, under which Ireland accepted responsibility for specific projects in a particular country. It is unlikely that this emphasis on a particular area would mean that other regions would be neglected, given the vigour of the existing efforts in this field The object of any additional effort would be rather, to supplement the existing efforts.

14.18 Of the more specific measures which might be adopted to stimulate Irish efforts, a number of possibilities suggest themselves. Details of teaching posts in emergent countries might be made available to Irish teachers, university and other graduates and students. This might lead to a change in the emigration pattern bringing increased numbers to these areas. It would also facilitate the flow of teaching staff if recognition of teaching service in all, or specified, emergent countries were adopted for purposes of payment or appointment in Ireland. In part, such a scheme is already in existence, as teaching service in certain African countries is already recognised. The extension of such a scheme might of course raise difficulties. There is the question of superannuation rights. Teachers who after some time spent in an overseas country were returning to Ireland, might be at a loss in terms of pension rights, if these rights were to relate solely to Irish teaching service. To allow pension rights for foreign service, however, would mean additional payments, which in many cases might be substantial, from public funds. It might be possible for an agreement to be made with countries which operate pension schemes, to transfer the amount of accumulated superannuation for each teacher who moves between those countries and Ireland. This might still require a supplementary state payment in some cases to bring the value of the benefits into line with domestic provisions, but the total involved should be of more manageable proportions than if there were no agreement. For countries which do not have pension schemes, or in cases where Irish personnel are going to an area for relatively short periods, arrangements might be made for the authorities, or the teachers themselves, to continue contributions to Irish superannuation funds.

14.19 A more difficult problem to resolve would be the extent to which such additional teacher flows between Ireland and such countries should be the result of individual decision, or be subject to official regulation. The nature of the difficulty will be immediately apparent; if teacher movements are left purely to personal choice, the result might easily be alternating periods of domestic teacher surplus or shortage, either in the aggregate, or in specific levels or subject areas. On the other hand, if movements are subject to official regulation, the result might easily be a stifling of individual interest and enthusiasm. While endeavouring to retain the maximum scope for personal initiative, it would seem that some degree of official organisation would be needed. Since the feasibility of arrangements would in part depend on domestic circumstances, it may be convenient to consider the various levels in turn.

14.20 At the primary level, the scope for providing teachers would appear to be slight. The previous chapters have indicated that there is a shortage of such teachers in Ireland in relation to desirable pupil/teacher ratios, a shortage which is likely to persist for a number of years to come. In the case of second level, vocational and grammar-type, and third level, university and technological, where the supply position is less difficult, the prospects are more encouraging.

14.21 One possibility which might apply to each of the latter levels, would be the recruitment of teachers to replace any given number of teachers who might volunteer for service abroad. The basis for the scheme is simple; since pupil enrolments in these levels are expected to rise in coming years, larger teaching forces will be needed. Thus it was estimated that compared with 1963, roughly 75 per cent more university staff, 60 per cent more vocational teachers and 30 per cent more secondary teachers would be needed by 1971. Hence, appropriate numbers of extra teachers could, if available, depending for instance on the subject areas and the amount of emigration of such teachers, be recruited now to replace experienced teachers who volunteer for some years of foreign service. In practice, of course, it would mean recruiting some additional teachers in each year, depending on the available supply of qualified people and on the length of time for which they were willing to stay, or were needed, abroad. The State might pay all or part of the salary of those teachers or perhaps guarantee their superannuation.

14.22 It may be observed that such a scheme would have the merit of not merely imposing no strain on the teacher supply position at home, but would in fact hold positive advantages for it. Even if such a scheme were not introduced for all second and third level teachers, it might be feasible for at least some subject areas.

14.23 In the case of third level education there might be further advantages in such a scheme. One of the problems with many university courses which are attended by the students from emergent countries is the difficulty, if not impossibility, of dealing with material relevant to those areas. The same difficulty arises with post-graduate students from such areas, who not unnaturally seek to do research on topics which are of importance to their own countries, but the difficulty of finding staff who are acquainted with the area in question means that they must either alter their research area or alternately accept rather inadequate supervision. The difficulty is a real one; there may be no facilities in his own country for a student to carry on research on some educational, engineering, economic, legal, social, geological, medical or other problems affecting the area, whereas the countries which have the facilities may not have staff who can give him really effective guidance. In these circumstances an organised system of staff movement to such a country would be of great benefit. Spending a number of years in one of the emergent countries would enable Irish staff to build up a knowledge and appreciation of the problems of the area, while if some of the students whom they would teach as undergraduates were to come to Ireland for postgraduate studies, they would also have some knowledge of the students' abilities and interests.

14.24 If there were a sufficient continuity of staff from particular faculties going to such countries, it might also be possible for Irish universities to provide courses which were specifically geared to the needs of overseas students. One practical difficulty in the way of such a prospect is of course the small numbers of staff in many faculties, so that unless all of the staff members were to serve abroad at some stage it is doubtful whether they would be in a position to mount such courses. If there is sufficient interest in helping these areas, however, it is probable that these difficulties too, could be minimised. Thus, it might be feasible for the faculties of each of the colleges to co-operate in organising their efforts and if necessary, interchange staff for periods in order to mount a course in at least one college.

14.25 It may also be that Ireland could make a very valuable contribution to educational development in, say, Africa by the creation in Ireland of a School of African Studies. Such a school could become a centre of relevant information about the emergent countries and for undertaking pure and applied research. It might also provide courses for Irish teachers who were prepared to take up teaching in Africa. Gradually a body of specialist staff could be assembled who would be competent to guide African students and supervise their work. Ireland seems in many ways to be particularly fitted to promote the development of African studies at university level.

14.26 There is a number of ways in which places for overseas students might be more effectively organised. A specified number of places might be reserved for students from emergent countries. These students need not necessarily be a proportion of the numbers in each faculty, but should rather vary with the requirements of the countries concerned. Again, it might be arranged to reduce or waive fees for pupils from these countries. There is also the ancillary topic of residential accommodation and social facilities. Rather than leave the bulk of such arrangements to the students themselves it might be preferable to have some more positive schemes. University residential accommodation, for example, might be made available for them. Additional items might be the organising of extracurricular activities. Such students, when they return home, will not merely be engineers, lawyers or doctors, they will also be leaders in their respective communities and it is important that they be given every opportunity of gaining an awareness of how other nations order their community life and also, forming a sound awareness and appreciation of their own country's situation and needs.

14.27 The foregoing paragraphs are by no means intended to be an exhaustive discussion of the methods by which Ireland might assist the emergent countries in the provision of education. They are rather suggestive of the methods which might be pursued and the considerations involved.

14.28 The Irish Government might bear all or part of the cost of any assistance, or funds might be made available from some third country, a possibility that should not be overlooked. Many advanced countries provide substantial financial aid for emergent countries, either in the form of official government programmes, or through the medium of private philanthropic organisations. The outstanding example of such activity is the U.S.A. When it comes to programmes calling for specialised staff, as with education, the funds available may well exceed the staff and other resources needed. Consequently, if Ireland is prepared to provide resources, either by way of staff to go to such areas, or the making available of study facilities in Ireland for foreign students, it may well be that other bodies might be able and willing to finance the programme and the possibilities of such arrangements might well be explored.

14.29 Leaving aside then the question of who actually pays for the schemes, the possible costs of the various proposals outlined above may be of interest. The first specific proposal related to the recognition of foreign teaching service, which, apart from any costs with respect to superannuation, would involve no cost. Since superannuation costs would vary on the ages and numbers of teachers there would be no point in trying to estimate these for anything other than a specific scheme.

14.30 The second suggestion related to the recruiting of extra teachers to allow the release of a similar number of experienced teachers for foreign service. The numbers here would *inter alia* be dependent on the average duration of foreign service. A period of three years might be adopted, and if this is used for all levels it would mean that the numbers of teachers involved, and hence the costs, would be of the following order.

TABLE 14.6

Estimated Cost of Extra Recruitment Scheme
(£)

	Number	Annual cost
University staff	250	
Secondary teachers ..	300	
Vocational teachers ..	350	£820,000
Transport		£60,000
Other Costs		£180,000
		£1,060,000

14.31 The costs are based on an average expenditure of £1,200 for each university and £800 for each second-level teacher. Transport costs are based on the assumption of one-third of this number of teachers making the equivalent of a return trip each year, plus one dependent per teacher, at a cost per trip of £200. Residual expenditure would cover removal and other costs. The teacher numbers are based on three years expansion demand at each level.

14.32 The costs of overseas students in Ireland are a more variable element. At present subsidy levels, the costs of reserving 10 per cent of university places for such students would be of the order of £200,000 annually. To waive fees for such students would broadly double this figure. At present overseas student subsidies would be of the order of £100,000, so that the increase would be say £300,000. To provide accommodation for this number (say 1,500) would cost in the region of £500,000 annually; travel costs would be say £50,000, so that it might be reasonable to take total costs as being of the order of £850,000 annually. At present the bulk of such costs is met by the students themselves.

14.33 Were the two schemes applied they would in total cost in the region of £2 million annually. In terms of resources the schemes would appear to be well within the capability of the educational sector; in terms of financial costs, however, they would represent a substantial addition to the total educational budget were they to be financed by this country. Added to the probable extension in domestic activity for coming years they would render the financing problem more difficult. The actual level of aid must be a matter for government decision, but assuming that the financing position can be resolved, whether by domestic or international means, the main burden of rendering any scheme which might be introduced fully effective, would fall on the educational sector. It would be hoped that the necessary enthusiasm and flexibility in arrangements needed to make Irish efforts fully effective would be forthcoming. The coming years will be critical for the emergent countries in their struggle to raise the living standards of their peoples. The Irish contribution to this effort should be the maximum of which we are capable, even if this should call for some unorthodox or impromptu arrangements.

CHAPTER FIFTEEN

Education and Economic Progress

15.1 The likelihood of a relationship between education and economic growth is now widely accepted and a number of studies have been made on the subject. There is, however, no general agreement on the precise nature of the relationship and the temptation to add to the dogmatic generalisations already made about it should be avoided. Indeed, the truth is that there is not even agreement among economists as to the most appropriate analytical and classificatory methods that might be used in examining the relationship between education and economic growth.

15.2 In economic analysis, expenditures may be classified as consumption or investment expenditures. Consumption relates to goods and services which give a direct benefit to the recipient; investment, to goods and services which are sought, not for their own sakes, but as a means to the acquisition of benefits at some future point in time. An example of the consumption purchase is footwear; of investment, a machine to produce consumer goods such as footwear. The division of expenditure between consumption and investment may have significant consequences for economic behaviour. If for example, an activity is classified as consumption, there may be reluctance to finance it from borrowing; if it is an investment, rightly or wrongly financing from borrowing may be regarded with approval.

15.3 There is a substantial literature treating education in 'investment' and 'consumption' terms. Indeed, considerable effort has been directed to disentangling and measuring the 'investment' element in education. We do not believe, however, that economists have as yet treated education satisfactorily on these lines.

15.4 In theory, the distinction between consumption and investment can be made once the purpose for which a commodity is to be used is known. If a bottle of ink is employed writing letters to friends, it is a consumption good; if used for writing a book, it may be an investment good. The practice, however, as indicated by statistical measurements varies considerably from this theory. A major reason for the divergence is the time factor. In the theory, time is a continuum, and an investment could be for a period such as a day, a week, or a decade. In practice, measurements of economic activity refer to discrete periods and in such aggregates as national income, consumption and investment, the standard time-period is a year. The use of such a time-unit requires, among other things, the introduction of a third category. Items will be classified as investments only if they do not mature within the relevant year; consumption, as before, will refer to end products only. There is, therefore, need for a third category to cover investment activities that mature within the year. Various terms are used (depending on the context) to describe this third category such as 'factors of production', 'inputs', 'raw materials' or 'costs of production'. Regardless of terminology, the intention is to refer to those items which provide the final output of goods and services of any period.

15.5 The terminological differences between theory and practice, between consumption and investment need not worry us unduly. For most purposes (as Keynes remarked in the *General Theory*) it does not matter where precisely the line is drawn, provided it is drawn consistently. The terms as used in practice, however, must differ from their theoretical connotation.

15.6 The second problem deriving from economic classification, arising as a result of the time-factor already introduced, is the manner in which the resources of a community should be allocated between different uses. The solution that is fundamental to capitalist economic theory is the pricing system and the concept of the market. Briefly, the convention is that if all exchangeable commodities are traded at a price agreeable to buyer and seller, and if there is an organised system of markets, available to all, so that those who wish to trade may do so, then the 'best' possible allocation of the community's resources will be achieved. This happens because commodities will come into the possession of those who have the monetary means to 'value' them most highly. If a person with the necessary wealth did not possess a given commodity which he 'valued' more highly than its possessor did, he would offer a price sufficient to induce the possessor to sell; hence, assuming the possession of adequate wealth and if stocks and time-lags are ignored, the possessors of commodities are those who 'value' them most highly. Buyers will then use the commodities as they think best. The price system, therefore, secures an allocation of resources between consumption and investment and between investments of different duration. Whether a bottle of ink goes to the consumer who writes letters to his friends or to the investor (the prospective author) will depend on which of the two pays the higher price. The allocation between investments of different time-duration will be effected in the same way, though the actual calculations are more complicated. If, for instance, there are two prospective investments, each requiring the same value of inputs, and giving the same outputs, but at different dates, then the one which matures first would be chosen. If each project costs £100 now and both projects will give a return of £108, the first in one year, the second in two years, then the £108 from the first project could be re-invested at the end of one year in another project so that it would have a value of more than £108 by the end of the second year. This project is obviously the more valuable. A second reason for choosing the first project is what is termed 'time-preference'. In comparing commodities at different points in time, people will generally prefer a commodity now to the same commodity at a future date. This 'time-preference' for present rather than future goods is reflected in a price—called a rate of interest—which people who forgo present consumption (lenders) expect and which people who wish to raise their present consumption (borrowers) will pay. Interest rate also determines the value of resources devoted to investment. Investment projects which promised a return greater than the interest rate would be undertaken now; projects, whose rate of return was less, would not. (In the 'marginal' case, the return would just equal the interest rate; hence this system of resource allocation is described as the 'marginalist' theory).

15.7 As a method for allocating resources to various uses the market price system certainly functions, but it does not necessarily yield a satisfactory solution from the viewpoint of the community. The adequacy of market prices as an allocative device depends on an acceptance of the existing distribution of income and wealth. It also assumes the absence of market imperfections. The imperfections of the market system of prices was one of the main features of Pigou's *Economics of Welfare* first published in 1912. His thesis has been illustrated with examples that have since become familiar to every student of economics, e.g. as a consequence of a factory's effluent, fish in an adjacent river are killed by pollution. The destruction of the fish or of the river's amenities generally will not appear in the manufacturer's costs of production nor will the cost be reflected elsewhere in the market system of prices, yet a cost has clearly been imposed on the community. In such cases, there arises what Pigou termed 'divergences between the private and social valuation of a product'.

15.8 Applying this concept of divergences to 'investment', there may be a significant divergence between private and social time preference. The divergence arises because, in the nature of things, the future tends to be more uncertain for the individual than for the community as a whole. The individual tends to discount the future at a high rate. Hence, for him, present consumption is relatively more attractive than future consumption. In short, individual rates of interest are higher than community rates would be. If resources are allocated on the basis of private individual's preferences the volume of investment will be smaller than that warranted by community preference. This first difficulty may be termed the 'divergence' problem.

15.9 As indicated above the 'market price system' also implies the acceptance of the prevailing distribution of income and wealth. This is so because the pattern of prices in a market system, and hence the valuations which will be attached to various goods, will be determined in part, not by an autonomous assessment of relative needs for goods, but by the amount of money which people are capable of spending on them. This pattern of prices and effective money demand also constitutes the basis in the free enterprise system for calculating the potential profitability of any project. It is clear, therefore, that projects can be classified as 'investments' or 'consumption' only on the basis of a given distribution of income and wealth. This second difficulty may be termed the 'distribution' problem.

15.10 The third doubt about the market system arises from the conditions which must be fulfilled before the system can work satisfactorily. The more important of these conditions are that there must be a big number of buyers and sellers for each commodity, so that no one person can significantly influence price. Commodities must be available in units small enough to meet individual requirements, and there must be perfect knowledge among the buyers and sellers of the situation prevailing not only for the commodity in which they are interested, but also for those commodities which are substitutes for it. The real world rarely satisfies these conditions. In the context of education, the important condition is that of knowledge. The education sector of the economy supplies a large part of the intellectual training and factual information by which the perfection of market knowledge can be promoted. Such knowledge is often assumed to be a precondition for the effective operation of a market price system; it is not possible, therefore, to see how the same price system can be used as a method of allocating resources to the production of such knowledge. This area of market imperfections may be described as the 'imperfections' problem.[1]

15.11 If a serious problem can arise with a market system for resource allocation, what are the alternatives? One solution is to jettison the price system altogether and effect an allocation of resources by a political process. But as no economy has yet succeeded in practice in effecting such a solution, this approach need not be considered here.

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[1] There might be some overlap in practice between imperfections and divergencies, but this need not detain us here.

15.12 The alternative to dispensing with a free market price system is to modify it, and this is what many countries, including Ireland, have done. Governments intervene and alter the conditions and consequences of market activity. Such interventions may be designed to modify the allocation of commodities as between persons, e.g. by reducing some incomes by taxes and supplementing others by pensions or grants. Intervention may also be designed to modify the allocation of resources to produce commodities, e.g. by restricting or reducing the sales of some commodities such as drugs or alcohol by legal regulations or taxes, while stimulating the use of other commodities such as education or fertilisers by legal regulations or by subsidies.

15.13 The existence of these 'mixed' (private and government) forms of economic activity results in, among other things, ambiguities as to what constitutes 'investment' or 'consumption'. If individuals are making the calculations about prospective 'investments' they would take account only of the costs and benefits accruing to themselves. If, on the other hand, a government is contemplating 'investment', it would presumably take account of the costs and benefits accruing to the whole of the community. Because of the 'divergence' problem, many projects if evaluated on both bases would give different results. Some, such as the pollution example already quoted, would be less attractive socially than to the individual manufacturer; for other projects, the position would be reversed. As long as governments and individuals, using their separate standards are operating in the economic sphere, it is difficult to see how a consistent classification between investment and consumption can be obtained. Hence the ambiguity as to what constitutes investment will persist.

15.14 Such an ambiguity presents difficulties and there have been many attempts to remove it. The result of such efforts, not surprisingly, has been the introduction of a further category, so that 'investment' is sub-divided into 'productive' investment and 'social' (or redistributive) investment. The 'productive category' is akin to the individual's concept of investment, in that the stream of benefits from a project must have a money value sufficient to defray all of the costs incurred (including interest). 'Social investment' on the other hand, refers to projects whose benefits to the community are more valuable than the costs incurred, even though there may be a financial loss because the benefits are distributed free, or at a reduced price. An illustration of the 'social' project might be roads, which are constructed and made available to all without any direct charge being levied. Alternatively, roads could be treated as 'productive' and a toll charged to road users which was sufficient to defray all costs. From a purely accounting viewpoint it is irrelevant which method of financing is used; the necessary revenue in each case is obtained—in the 'productive' case from tolls; in the 'social' case from general taxation. The real difference between the two methods lies in the welfare effects. With the toll method the roads will be used by those who can afford the toll, with the social approach the income restraint is removed and the roads may be used by anyone. As the 'social' approach results in some redistribution of income and/or welfare from those who pay taxes to those who do not the term 'redistributive' investment has also been used to describe such projects.

15.15 Not all economists are agreed that there should be a separate category of 'social' investment. Many would contend that the essential characteristic of investment is that the value of the benefits should exceed the costs, and that the only objective measures of such benefits and costs are the monetary receipts and payments involved. If benefits are to be available free of charge, any monetary estimate of their value must be vague. Hence many items could be declared to be 'social investments', when in fact the value of the benefits would fall short of the costs. This would mean a misallocation of resources. Accordingly, it might be preferable to treat such expenditures on 'social' projects as a form of consumption, not investment.

15.16 The division of views arises because of the interaction of the three problems—divergence, distribution and imperfections. The advocates of the 'social investment' view can point to the presence of these problems as a reason for by-passing the market mechanism. The advocates of the 'social consumption' viewpoint would hold that the best solution would be to mitigate these problems by specific actions within the market framework. They would argue that withdrawing any one activity from the market only aggravates problems for the remaining activities, thus lessening the prospect of ever achieving an acceptable market system.

15.17 It is unlikely, therefore, that in education the pricing system could produce an acceptable or indeed a rational allocation of resources. Since there are in education features which suggest that the conventional economic analysis may be quite inappropriate in that sphere, it is time to introduce education into the discussion.

EDUCATION AND ECONOMIC ACTIVITY

15.18 Is education consumption (or 'output') or investment (or 'input')? If it is investment, (if education is a necessary input or raw material for the production of goods and services), then it is important to know how much and what type of this input is needed for any given level of output. The preceding paragraphs have sketched how some economists attempted to classify activities between consumption and investment, as well as the allocation of resources to each activity. It was seen that in each case it was unlikely that precise or clear-cut solutions could be found. There are areas where in practice, the distinctions between consumption and investment are somewhat vague. In determining the allocation of resources it was again seen that, in practice, there was a number of problems and difficulties which might distort and invalidate the allocation achieved by a price system.

15.19 The same situation exists with regard to education. Many economists who have written about education have not discussed its nature or purpose in any detail. Instead, they have for the most part either assumed that their readers know what it really is, or else in order to channel the discussion firmly along economic lines, use phrases such as ' development of human resources ' to describe education, with the inference that people are akin to other natural resources in that they must be ' processed ' before their economic potential can be realised and that education is a major factor in this development. The ' resource development ' analogy is a convenient one for economists; it enables them from the outset to treat education like any other industry. They can then discuss whether the ' education ' industry is operating efficiently or whether there is scope for obtaining the same products more cheaply; whether the products satisfy customers' requirements or whether there is scope for alterations to meet these demands more adequately; whether the level of technology is reasonable in comparison with that of other industries or whether there is scope for research and development efforts which might reasonably be expected to yield improved techniques and production methods. In some such manner education may be examined and discussed and conclusions drawn. Having done this the economist may point out that the analogy should not be pursued literally, that education serves other purposes and other values, social, intellectual, cultural, aesthetic, spiritual and that these must be taken into account.

15.20 Some economists, taking a very limited, but legitimate view, arrive at the conclusion that education is concerned, among other things, with knowledge and information. Knowledge, including an acquaintance with abstract, intellectual principles as well as empirical observations and data, is something which people normally wish to acquire. To be available at all knowledge must in the first instance be possessed by at least one person; to be useful it generally needs to be available to several. Accordingly there is a demand for the transmission of knowledge between persons. A significant part of this transmission takes place by the organised and systematic process called education, though with the development of media of mass communication such as television, radio, newspapers and books, the role of education in this transmission may be less apparent than in the past. Supplying knowledge to people who desire it might be the function of the education industry and on this view it is the acquisition of knowledge that transforms 'undeveloped human resource' into the finished product of doctor, craftsman and so forth.

15.21 To describe education in terms of a knowledge-producing process may help the economist. In considering the economics of the education industry itself, it will reveal other aspects of the subject, such as the economies of scale and external economies that arise from a wider diffusion of knowledge. Economies of scale occur, firstly, because as one piece of knowledge is transmitted to an increasing number of people the transmitter(s) will very likely become more specialised and more proficient and, secondly, as more people acquire any piece of knowledge there is a greater likelihood of a cross-fertilisation taking place between them which may result in stimulating new knowledge or in more effectively propagating existing knowledge. External economies also arise from the possession of knowledge because the possessors may be able to use it in a way that benefits other people as well as themselves.

15.22 The knowledge-producing concept of education also throws light on the relationship between education and economic growth. Education can be both a cause and a consequence of economic growth —a consequence because as people become better off they may seek more education for its own sake, for the satisfaction it gives. Education may be a cause, in that education or specific aspects of it may be a necessary condition for the production of some goods and services. To the extent that education is a cause of economic growth one must try to ascertain the amount and nature of the education needed to attain any given level of output. Viewed in this light, education as a knowledge-producing process may be thought of as contributing to economic growth in two ways. Firstly, there may be an increase in the total stock of knowledge in a community by the transmission of existing knowledge to a larger number of people; secondly, there may be an increase in the knowledge stock through the discovery or introduction of new knowledge. By examining such questions as, for example, whether or not the available knowledge stock is being fully utilised, whether or not the education industry is producing adequate supplies of people with the appropriate knowledge needed for present and future production, whether or not there is scope or need for introducing some knowledge which is available abroad into the country, economists may do much useful work on the relationship between education and economic growth.

15.23 Even though valuable work can be done in this field it may still be so simplified as to be misleading. A large part of education is certainly bound up with human resource development in the economic sense and with the distribution of knowledge. There is, however, more to education than these activities. That there is, indeed, more, is recognised by some economists, but unfortunately, there is no integrated and comprehensive economic discussion of this whole area. There are often grave defects in the economists' approach to education. An awareness of the dynamic aspects of education and of their effects on the pattern of economic activity is often lacking. Education theorists frequently use phrases such as 'the process of developing the human personality' to describe education. This development is, however, a complex process which is still not completely understood. Undoubtedly, the acquisition of knowledge plays an important part in this development; man possessed of some knowledge is held to be very different from man in a state of innocence. Moreover, the process is irreversible. Once acquired, knowledge cannot be disposed of except by the oblivion and mental decay that come with time. But knowledge is not the sole route by which the human personality emerges from its chrysalis. There is also the development that comes through the spectrum of such activities as character formation, moral training, cultural awareness, which result in the production of the mature person adjusted to his spatial and temporal environment and conscious of his limits and capabilities.

15.24 Once education is thought of in this way it becomes clear that its relationship to the pattern of economic activity is also complex. It no longer is a simple matter of education being a necessary input (like fuel or labour) in the production of some goods and services, the remainder being a consumption good acquired for its own sake. Instead, different aspects of education become 'necessary' inputs in a variety of ways which will change both with time and with the level of economic activity. Thus, if one is interested in short-run periods of economic growth, it may be a sufficient approximation to think of education as a 'knowledge-input' in the production process—i.e. providing the engineers, chemists, craftsmen and so forth needed to produce specific goods. But as the time-period lengthens other aspects of the educational process become more important. Are people industrious or indolent, law-abiding or irresponsible, progressive or conservative? Differences in such characteristics can lead to differences in the level of economic output, differences which a simple knowledge-input concept of education would not explain. Thus two communities could possess the same stock of knowledge, but because of differences in attitudes to work, one community could have a higher level of output than the other. Again, an irresponsible community may have a lower output than a more law-abiding one, because of the need for a larger police force, and of losses through malicious damage and destruction. An over-conservative community may have a lower output level than a more progressive counterpart because it is nostalgic about traditional ways of life and more reluctant to introduce new techniques and methods.

15.25 The prevailing stage of economic development may also have a bearing on the contribution of education to the productive pattern. At a primitive level of development, the most useful educational processes may be those which import knowledge of existing productive techniques from abroad and which inculcate the attitudes of a socially cohesive labour force. At a high level of economic development, on the other hand, those educational processes may be economically more valuable which far from inculcating social conformity, rather accent and provide scope for the differences in individual talents and interests, as being perhaps a necessary step in stimulating the production of new knowledge and new products.

15.26 It remains to be seen, therefore, whether the traditional type of economic analysis can cope adequately with education. As has been already explained, economists generally seek to analyse the effects, importance and efficiency of an industry through the use of a price system. A price system will determine the amount of expenditure on the products concerned, and will also allocate the resources needed to produce them. If the products are consumption goods, the economist, as an economist, does not question the amount purchased (though he may in his capacity as a citizen advocate restrictions on some, drugs etc. and inducements for others—milk, health services, etc.). If the products are investment goods, on the other hand, he will want to know what quantity is needed to achieve a given output of those goods for which it is an input in order to ascertain how much of the product will be needed to achieve any specific growth target.

15.27 Is such an analysis likely to yield accurate results in the case of education? The answer is extremely doubtful. Problems of classification and allocation make it unlikely that a satisfactory solution can be obtained for any commodity. In the crucial area of education it is not even possible to agree on its classification since this falls into a ' twilight ' zone of ' social investment ' or ' consumption '. Moreover, education does not contribute to economic activity in any single simple way, but varies with time and circumstances.

15.28 If either of the two groups of problems can be even partially resolved, then the economic analysis of educational activity might be improved. These problems were the differences between theory and practice in classification and the group of problems associated with a system of market prices, chief of which are the divergencies, distributional and imperfection problems. All of these are general and would exist with any commodity. There were also the problems specific to education (and perhaps some other commodities); these were, the irreversible nature of the product and the changes in the relative importance of different educational aspects with time and economic circumstances.

15.29 There is little prospect of the disparity between theory and practice disappearing. Measurements of economic phenomena in the real world are of necessity based on a series of statistical conventions, which at best can only broadly accord with theoretical ideas. We are still a long way from the time when we can say how many bottles of ink are used for 'consumption' or 'investment' purposes, so that even if all theoretical problems were resolved, we would not have an accurate picture of any one item or activity. In the specific case of education similar problems will continue to exist. It may be, for example, that some of the courses given in educational establishments have little educational benefit for some of the persons who attend them, whereas other activities—visiting art galleries, or foreign travel—may prove highly educational. In practice, however, when attempts to assess the scope and composition of educational activity are made, it is necessary to use a set of conventions for the purpose. 'Education' will generally be thought of as something provided by certain establishments—schools, colleges and so forth—and measurements will relate to such factors as the numbers who enrol and complete the various courses offered by these establishments. The measurements may be extended to include such items as 'on-the-job' training but it will remain true that many activities, because they are informal, or not primarily educational in interest, will continue to be excluded from the statistical net.

15.30 Turning next to the theoretical difficulties of 'divergencies', 'distribution' and 'imperfections', one finds that these are all likely to be of importance in the case of education. Thus, the attempt to assess the importance of education by estimating its cost and value to the individual is complicated by the fact that part of the returns (and it may well be in some cases the bulk of the returns) from education accrue, not to the individuals but to the community as a whole. This might be illustrated by, say, the doctor who discovers a new treatment for a disease, and for whom the value of his discovery may be only an insignificant fraction of its value to the community, so that a substantial 'divergence' between the private and social value of a process may arise.

15.31 Similarly the problem of distribution may complicate the question. It may be reasonable to accept that with commodities such as motor-cars, the millionaire may have his Rolls-Royce, the average man his mini and the poor man his feet, but it is unlikely that this solution of the problem of 'who gets what' would be acceptable in the case of education. This is widely accepted in practice and most communities do in fact, effect a redistribution of income and wealth, favouring increased educational opportunities for poorer persons in the community by such measures as, scholarships, prizes and the provision of free or low cost school facilities. But difficulties still remain. Allowing for the third problem of market 'imperfections', it is clear that in the case of education, imperfections of knowledge can be a complicating factor. Even if education is available at attractive terms, many people may still choose to spend their money on other purposes. If this choice were made with full knowledge of the alternative possibilities, the economist would be satisfied with this expression of consumer sovereignty, but if it is imperfect or restricted the economist would first seek to have that knowledge improved. Education is one of the commodities which will enable the individual to acquire this wider knowledge and make more rational choices. As such, education might justifiably be viewed as a necessary cost of achieving the more perfect market desired by economists; as long as education is incomplete so will 'imperfections' in the market system persist.

15.32 A free market system is unlikely, therefore, to yield an educational pattern which would be satisfactory from a community viewpoint. At best it might provide a reasonable guide line for individuals or small groups (those who had sufficient knowledge and income and for whom divergencies will not be a restricting factor); in such cases, the individuals concerned may acquire some education either as 'consumption' or as 'productive investment'. For the community as a whole, some other approach must be followed. This raises the question as to whether education should be considered as social 'investment' or social 'consumption'. It is, no doubt, at least partially intended to be social consumption, since historically, one of the reasons for the introduction of subsidised or even compulsory education, was the wish to provide something considered to be valuable in its own right. But is education also a social investment—something which even though it would not yield an adequate monetary return, none the less has a beneficial effect on the pattern of economic activity? To answer this question one must have a criterion to decide what constitutes a social investment. As already suggested, the need for such a criterion arises because of the rather nebulous character of many benefits from prospective 'social investment'. A criterion which might resolve the difficulty would be to equate investment with capacity creation. An essential characteristic of any investment project (whether productive or social) is that it leads to increases in the productive capacity of the firm, industry or economy concerned. Thus a shoe firm which is making a 'productive investment' in an extra factory will be increasing its capacity to produce shoes. Similarly an economy making a social investment in roads increases its potential output by raising its capacity to transport raw materials, finished products and so forth between producers and consumers. Education then may be considered as a social investment if it raises the productivity capacity of the educated. In fact much educational activity does have this result; the output of any modern economy would be drastically reduced if its workers were replaced by an equivalent number of people who had received no education. This example may not be wholly accurate because part, at least, of any worker's productivity is the result of experience gained on the job ('learning by doing'); but even allowing for this, the removal of education from a labour force would clearly lead to a reduction in output. Some part of educational activity, therefore, leads to capacity creation, and hence it is a social investment.

15.33 Education, therefore, is at once a form of private consumption and investment and also a social form of consumption and investment. This statement is not very helpful in answering the question of how much education is needed for any economy. If we dispense with the price system as a major device for allocating resources, some other method of determining the volume of education must be found.

15.34 It may be noted that the capacity-creating concept of investment relates primarily to the potential results of an activity whereas the productive concept relates to actual results. Thus, if a new highway is constructed the capacity so created will relate to the volume of traffic which the road could carry; if, on the other hand, it were treated 'productively' (and tolls charged) the road would only be an investment if adequate revenues were obtained—which would depend on the volume of traffic actually using the road. Ideally, the two measures would be very similar since people would not wish to install capacity for which there was no demand. In practice, however, significant differences in the degree of utilisation of various investment items may occur. This suggests that the capacity creating approach may be the more appropriate one in deciding on investment activity, because all investment decisions are based on expectations about the future and it is largely irrelevant whether these expectations are justified by subsequent events (except in so far as experience may modify expectations for some subsequent period).

15.35 Using the capacity-creating concept of investment, one way of determining the educational requirements for any given level of economic activity is to estimate the 'manpower' needed (both in total and in composition) to sustain this level and then to plan for the educational system needed to provide the requisite numbers with the appropriate qualifications. Some of the limitations on such an approach will be immediately apparent. It presumes some unique relationship between output and the educational occupational content of the employees who produce this output. In practice, however, it is only rarely that a specific composition of employment is necessary to produce any given output; more usually, there is scope for a variety of combinations. The actual choice of combination will be influenced not only by technical but also by economic considerations, such as the cost of the different combinations. In effect, making a 'manpower' forecast for some future date implies an assumption about the relative prices of various factors in addition to knowledge about the future level of output. Moreover, this approach can provide only an estimate of the occupational structure needed to produce the output of a given date; it does not say anything about the numbers needed to change this level of output in a subsequent period. Research workers who contribute nothing to this year's output may be the agents of an increased output five years hence. Thus, at best, a 'manpower' approach can only give an indication of the short or medium term minimum economic requirements of education. With these reservations, it is none the less true that a manpower approach, with all its limitations, is the most tangible basis for an assessment of the economic requirements of education.

15.36 An assessment of the long-term economic needs for education demands information which at present is not available. Research efforts may result in new products or production methods, but there is as yet no prospect of establishing a predictable relationship between the two. The research effort needed to sustain any rate of economic growth cannot, therefore, be specified. Similarly, it is not possible to quantify the educational efforts needed to promote those social characteristics most conducive to economic progress. It is probable, however, that these educational efforts are more a question of educational curricula rather than of levels or amounts of education. It is nevertheless important to emphasise the economic significance of these characteristics, because in the long-run, it is these rather than specific 'manpower' skills which will determine the economic situation of the community. This suggests a need for co-operative research on the part of educationalists, sociologists, economists and others in order to develop some knowledge of such requirements.

15.37 Meanwhile, on the question of determining the volume of education the conclusion must be that beyond pointing out the factors involved and the economically beneficial effects of the right types of education, the economist can give no answer other than 'more'. The question must be answered on the basis of a comprehensive social view rather than a narrow materialist view of community needs. Such a conclusion is inevitable once it is accepted that a price system of itself is inadequate as a basis for the valuation of products and that in its stead some socially acceptable basis of valuation is needed. In day-to-day affairs such 'socially acceptable' decisions may be reasonably expected from governments which have been freely elected by citizens.

15.38 Accordingly it may be taken that the total pattern of educational activity will be determined by both economic and non-economic considerations. The investment component of such a total may be presumed to be determined by government policy on economic growth somewhat along the basis of the capacity-creating approach outlined earlier.

15.39 Although this is all that can usefully be said on the economic aspects of education, it may still have some implications for policy. Hitherto, most of the expenditure on education was financed from current revenue, only items such as school buildings or equipment being financed by borrowing, and these not always; the distinction presumably being that the former is a 'current' and the latter a 'capital' expenditure.

15.40 This distinction between capital/current (investment/consumption) items is a derivation from nineteenth century accounting methods which accorded with marginalist economic theory. It is, however, a distinction that is becoming increasingly questioned as a result of recent developments in economic theory. The need for a capital/current distinction still remains on the expenditure side because capital expenditures lead to capacity-creation; it is important, therefore, to know the nature and extent of such expenditures in order to have reasonable projections of future full-employment output levels.

15.41 No such need for a distinction remains on the revenue side of the accounts. Classical accounting methods produced the necessity for balancing the accounts as a whole, while conventional economics produced the idea that in addition, capital revenues should balance capital expenditure. Similarly with current transactions, though here the preference was that there should be a current surplus, which would reduce the need for borrowing. This antipathy towards government borrowing was based on the assumption that the expenditure of borrowed moneys would be unproductive, an assumption which today is recognised to be inaccurate and inadequate. The need for balancing the budget was based on the assumption that a balanced budget was neutral, whereas a budget surplus would be deflationary and a deficit budget inflationary. A 'balanced' budget, however, may be either inflationary, neutral or deflationary, depending on its composition.

15.42 Apart from this there has been a change in attitudes which has led to the modern view that, economically, the government's role need not be a neutral one. Accordingly, changes in the composition and size of the budget may be justified by a government's responsibilities in the fields of employment, economic growth, social welfare and so forth. Borrowing, therefore, merely becomes another item on the revenue side of the account whose size should be determined, not in relation to some out-dated classification of expenditure, but with reference to other potential sources of revenue.

15.43 One topic not referred to in the earlier discussion was the question of the 'returns' on educational investment. Three main methods of approach to this question have been used to date, which may be termed, the 'direct', 'correlation' and 'residual' approaches. The direct approach may be disposed of briefly. This approach compares the earnings of people who have had different amounts of education and then relates the differences in earnings to the costs of acquiring those earnings. Thus, if an average university graduate earns more than persons with, say, first level education, the sum of these extra earnings may be compared with the extra cost of acquiring second level and third level education. (The studies made so far suggest that the rate of return of educational expenditure is fairly high.) No attempt has been made in the present study to use this approach, because the inaccuracies and imperfections inherent in a price system render such calculations of little value for the whole economy though they may, of course, be of interest for any one individual.

15.44 The second approach is the 'correlation' approach, where some measure of educational activity is correlated with some measure of economic activity in an attempt to see what type of relationship exists between the two. The conventional measure of educational activity is total expenditure or total stocks of educated people; gross national product or national income is the normal economic indicator used. Comparisons can be made either with different countries at the same point of time, or for the same country at different points in time, either of which will show how the educational series moves in relation to the economic series. The basic difficulty with this approach is that both series are likely to be inter-related. Thus gross national product may rise as the stock of educated people rises; in this case education may be considered an 'investment' activity. Educational spending, however, may rise because national income has risen, thus enabling people to 'consume' more education. It has been suggested already that education is both a 'consumption' and an 'investment' activity, and ideally if one is interested in returns on education, one would need to distinguish between the two elements. It would be necessary, however, to design elaborate measurements, in order to disentangle the interdependence which might be present. No study has yet done so, because the data required are not available.

15.45 The third approach is to use what is termed the 'residual' method of estimating educational returns. The aim here is to identify the portion of increased gross national product which can be attributed to known inputs, such as additional capital and labour, the balance unaccounted for may then give a measure of the increase attributable to 'residual' elements such as education or increased knowledge. There are two main difficulties in this approach. The first difficulty is that the portion of increased output attributed to capital inputs is likely to be too low, because with the usual measurements, no account will have been taken of the improved quality of the later capital inputs compared to those of earlier time periods. As one writer has put it, additional capital is viewed as wooden ploughs piled upon the top of existing wooden ploughs. It could, of course, be contended against this that it *is* correct to measure capital inputs at a constant quality level, because any improvements in technology which make newer capital inputs more productive are the results of changes in men's knowledge, and hence *are* a valid part of a 'residual' factor. The second objection to the 'residual' approach is a more serious one. Since it *is* a 'residual' which is obtained when labour and capital inputs are deducted, one cannot validly call this 'residual' a measure of the returns on education, or on any other factor for that matter. It is, as another writer puts it, a measure of our ignorance', so that while one might argue that improved education leading to better communication and increased knowledge is an important component of this 'residual', there is no way, at present, in which one can measure its contribution.

15.46 The conclusion which emerges from this summary of the possibilities of measuring educational 'returns' is a rather pessimistic one. Given the present state of knowledge, it does not appear that sufficiently accurate measurement of 'returns' is possible. It does, however, seem reasonable to be more optimistic about future prospects since it is probable that all three methods will be further developed and refined; none the less, the day when fully acceptable measurements will be available would still seem to be a long way off.

15.47 Finally, it may be useful to refer to the title of this chapter. The term 'progress' was used deliberately rather than 'growth', because growth implies an increasing level of gross national product or other similar measure of economic activity. One consequence of increased education however, might well be a reduction in the measured volume of economic activity, because people might with every justification choose to devote an increasing proportion of their time to non-economic activities in their pursuit of happiness. Such a development could still represent progress even in the economic sense since the productive potential of the community might be increasing at the same time. The fact that this capacity is not used would, if expressed in gross national product terms indicate that the economy was declining. This would clearly be an inadequate representation of the true position and so we have used the term 'progress' as a reminder of the interactions between economic and social phenomena.

SUMMARY

15.48 Difficulties arise in using a free market price system as a method for allocating resources to various uses, which render the results of that system unacceptable from a community view point. In the specific case of education these difficulties would be likely to be accentuated. Acordingly, conventional economic theory seems an inadequate basis for determining the pattern of educational activity. Short or medium run educational needs might be estimated on the basis of an overall 'manpower' forecast for the economy. Longer term needs, which are ultimately the more important, could be assessed (if at all) only after much educational/sociological/economic research. Meanwhile, decisions which were 'socially acceptable' must be made by governments, which presumably, would take account of economic needs in so far as these could be articulated.

CHAPTER SIXTEEN

Some Issues and Problems Emerging from the Survey

16.1 As determined by our terms of reference this Report is essentially analytical in character. It contains no recommendations on policy. Any attempt at a summary, therfore, would inevitably mean the selection of some topics and the omission of other topics of perhaps equal significance. We feel, nevertheless, that although a formal summary may not be feasible, some indication should be given of the general aim of the Report and of some conclusions reached as well as a pointer towards some issues and problems that emerge from the survey.

16.2 The Report may be considered under the following four headings: —

- (i) a projection of current trends in Irish education under existing Government policies (chapters 1 to 5);
- (ii) an examination of the extent to which this educational system can satisfy basic social and economic objectives (chapters 6 to 8);
- (iii) a discussion of the efficiency of the educational system in its use of resources employed (chapters 9 to 11);
- (iv) a review of possible implications for educational policy and decision-making arising from the survey (chapter 12). Chapter 14 deals with Irish aid to education in emergent countries and chapter 15 considers the general question of education and economic progress.

16.3 The only formal recommendation required by the terms of reference is contained in chapter 13, which proposes the creation in the Department of Education of an educational development unit staffed with professional personnel and designed to transform the Department of Education into a development corporation. One of the main conclusions that the members of the survey team have drawn from their work is that educational planning must be regarded as a continuous process which in its implementation must be open to revision and regular readaptation. It seems to us to be essential that knowledge should be constantly up-dated and that for this purpose suitable machinery should exist. In this sense educational planning can only be achieved in co-operation with experienced educationists and it can achieve very little unless it has effective support from public opinion. Educational planning machinery must be an integral part of the administration of the Department of Education and should be in no sense a mere statistical adjunct to that Department or an advisory body. The aim here is to ensure that every decision concerning education can be informed by all relevant facts and by an understanding of the implications of these facts, not merely for the educational system but for the economy.

16.4 The aim of this Report has been to explore the Irish educational system, to examine its component parts and to ascertain the extent to which the system seems able to satisfy the demands likely to be made on it in the light of the needs of the 1960's and 1970's. In drafting the Report we have avoided recommendations of a pedagogic character because these are precluded by our terms of reference. We have been concerned to analyse the educational system in the context of Irish economic development and with a clear awareness of the sociological significance of what the educational system does and does not do. Our aim then, has been not to make pedagogic recommendations but rather to analyse the educational system with a view to helping towards decisions as to whether or not the human and material resources in Irish education are being employed in the most effective manner. Our work in this Report has been, we hope, no more than the beginning of a continuing exercise in investigation and review which we recommend the Department of Education to undertake in the future.

16.5 We began our Report by surveying the diversity and complexity of the Irish educational system. Part I attempts to develop a sense of perspective which may be relevant if social and economic programming are to be integrated. Our forecasts of population show how the population trend is likely to be reversed in the decades ahead and what this may mean in terms of pupil enrolment and of resources required. While the present national population trend is likely to be reversed a further decline in population seems likely in rural areas accompanied by an increase in urban areas. It need hardly be emphasised how important a factor for educational planning the level of emigration will be in the future. We have made our forecasts of population on different assumptions regarding emigration ; in this, as elsewhere in the report, we have followed closely on the lines of the assumptions made in the Second Programme for Economic Expansion.

16.6 In our chapters on projections of costs it is quite clear that a substantial bill will have to be faced by the community in respect of education in the future. There are, for instance, not enough national teachers to meet the targets for pupil/teacher ratios proposed by the Council of Education, if the present organisation of schools and of the educational system generally is to be maintained. As regards post-primary facilities it will be necessary to reconsider the question of the existing organisation of facilities. This is urgent not only because of the need to provide full educational facilities for all areas but also because of the very heavy programme of building replacement which may be expected in the near future as a result of the advanced age of many existing secondary schools. It will also be necessary to consider the possibilities of more flexible use of resources, particularly in the smaller centres and in which transport facilities will have an obvious role to play. Additional university capacity is being provided but it seems inevitable that the capacity at present planned will quickly become insufficient in the decades ahead.

16.7 A considerable number of Irish pupils receive no post-primary education of any kind, and of pupils who begin post-primary courses a high proportion do not finish. Indeed, in the primary level we find indications that some 8,000 leave school every year without reaching primary certificate level. There are, in addition, inequalities in the participation in post-primary education of children at all levels, based on social group and geographical location. There is, clearly, a need for public policy to concern itself with these anomalies. In the case of university education, for instance, the cost to the student will obviously be substantially higher if his home is not in a university town. Present trends indicate that, while there will be great expansion in the numbers of university students, this expansion will take place mainly in the Arts faculties. It is a matter for consideration whether it might not be desirable to take some steps to encourage more rapid development of some other faculties.

16.8 Almost half of the entrants into Irish universities have only 'pass' qualifications from their secondary schooling. In the Engineering faculty more rigorous standards are imposed. It may have to be considered, however, whether the present basis of examinations for satisfying entry requirements to the universities could be improved. This might be looked at from two aspects:

(i) general level of entry standards;

(ii) the combination of subjects.

Care will have to be taken to avoid the waste of scarce resources in having university staff teaching students who have satisfied only low entrance requirements when, in fact, other young people who could satisfy higher entrance requirements may at present be denied admission to the universities because their parents lack the means to pay for them. At present each university student, irrespective of ability (beyond satisfying matriculation requirements) is subsidised by the State to the extent of approximately £120 a year.

16.9 We have attached very considerable importance in our report to primary education and believe that no effort should be spared to attract the potentially best teaching talent to primary education. Very many members of our community acquire their formal education exclusively at the primary level. It is at that level that children should be inspired to continue their studies. Moreover, it is important in the decades ahead that the labour force should have enough basic education, not merely for present occupations, but as a basis for retraining in the event of change of occupation.

16.10 Even on the basis of what seem conservative targets we find that there is likely to be a shortage of qualified persons for work in the 1970's—a shortage of persons with post-primary certificates. All this shows the need for wider participation in education and for longer retention of pupils in the educational system.

16.11 It will also be clear from the Report, but particularly from chapter 8, that there is ample scope for the expansion of full-time technical education in Ireland.

16.12 We did not consider it part of our function to engage in any extensive analysis of curricula, but it is relevant to say that the Irish language is the sole teaching medium in only 134 out of some 4,800 national schools, apart from schools in the Gaeltacht. On the other hand out of approximately twenty hours per week instruction in national schools ten hours are devoted to the vernacular languages of which about two-thirds are devoted to Irish and one-third to English. We feel that the data on curricula in chapter 10 and the data on the destinations of students given in chapter 6 will be of value to the Department of Education, to schools and to parents in their reconsideration of the use of student time—the most important resource of all in the ultimate analysis.

16.13 From an informal investigation of the career intentions of students at the various levels reflected in our questionnaires, we are left with the impression that at all educational levels choices are often made in a casual and arbitrary manner. Parents and children may often be ill-informed about prospects and potentials in making vital career decisions. We believe that the establishment of adequate career guidance is necessary in all branches of the educational system.[1]

16.14 In many ways chapter 12 of the Report is a crucial one in the context of educational planning and development. It suggests an approach to the problem of an improved allocation of resources in the educational sector. The data and analyses of the Report have generally been organised around major elements, which in that chapter are used to examine possible alternative developments of the educational system. Three major elements have been defined:—

(i) The minimum needs of the Irish economy to increase the flow of educated people. There appears to be a gap between the projected flow of qualified manpower and the projected requirements of qualified manpower. The particular part of the educational system related to this short-run deficit is the junior cycle post-primary.

(ii) Participation. Significant disparities were found in participation in the educational sector among various socio-economic and regional groups.

(iii) Efficiency. Examination of the efficiency of important parts of the educational sector showed possible scope for their reorganisation.

The manner in which these three elements are related constitutes the basic strategy of our Report. From these strands of data and analysis, possible directions in Irish educational development are explored. First, in order to meet projected manpower requirements it would be possible to increase the participation in education of those social groups *already* tending towards high participation. This would, for example, be the result of concentrating on an expansion of conventional scholarship schemes, which would, to a large extent, support an expansion of the existing structure of education.

16.15 The alternative strategy would be to shape educational development so as to enable those groups in the population now largely not participating in post-primary education to avail themselves more extensively of it. Initially, the cost would probably be greater than expanding on traditional lines. Here, for example, a system of student support proposed would be based on need. This alternative would avoid creating a further imbalance in the educational system which would be even more expensive to correct later. Given, however, the limited resources available for education, as well as for all of the other elements in national development in the years immediately ahead, this question of cost is of course of utmost importance.

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[1] See, for instance, the introduction to 'Irish Independent Guide to Careers' (Dublin, Independent Newspapers Ltd.).

16.16 At this juncture, the data suggesting gaps in the efficiency of the educational system in terms of the pattern of use of existing educational resources, seem to offer the most feasible approach to the problem of what expansion of the educational system is needed. An unplanned expansion of the educational system, which would merely multiply the existing structure, would rapidly exhaust available resources and be accompanied by a declining return in terms of student output. Thus, efficiency gaps in the educational sector, extended as trends into the future, are sufficiently wide to prevent any possible solution to the problem of manpower shortages or inequalities in social participation in education. Conversely, these problems might in large part be solved within the level of available resources, if new organisational and other approaches were adopted. This will be the specific and urgent concern of any future planning programme for Irish education.

16.17 Many examples of the need for planning on both educational and economic grounds suggest themselves. A high proportion of existing national schools need to be replaced in the next fifteen years. It is desirable, therefore, to examine whether a reduction in the number of very small schools might be feasible if transport services were made use of. This may be a specific example of where considerable and continuing savings in costs could be made and, at the same time, increases in benefits secured through the provision of better educational services.

16.18 Although our Report is concerned primarily with current problems we have been aware throughout of the desirability of having Departmental machinery available to investigate and report rapidly on problems created by new knowledge. Such problems require that curricula be regularly revised for relevance and that teachers should have effective contact with new developments in their subjects and with new techniques for presenting them. Facilities should be available to enable teachers to be aware of the relevance of psychological and sociological research to their tasks. We would finally like to emphasise the need for experimental testing of new educational strategies on a local and pilot basis before such strategies are introduced on a regional or national basis.

16.19 The trend towards a freeing of trade and the likelihood of Ireland becoming increasingly involved economically in Europe emphasises the need for teaching Continental languages at all levels of post-primary education.

16.20 At present expenditure in Ireland on either basic or applied educational research is negligible. To increase both types of research is, of course, desirable, as also is the promotion of procedures for ensuring that the results of relevant research conducted abroad are available in Ireland. Research might concern itself, for instance, with the relationship of inputs of resources to outputs, including the evaluation of various combinations of resources. Such research might particularly be concerned with the evaluation of the pedagogical consequences of innovation. If the proposed development unit in the Department of Education is to function effectively, it must be able to identify obstacles preventing the achievement of objectives. These obstacles may derive from the quantity or quality of resources in use, from social traditions, from attitudes or indeed from technical pedagogical problems. Such problems would be fit subjects for research.

16.21 Since so many of the educational issues raised in our Report have long-term economic implications we suggest that the observations of the National Industrial Economic Council on these issues should be regarded as an essential part of the background against which decisions would be taken.

16.22 As we said in our introduction, we see in the Report only a beginning, a foundation on which others may build. There is no finality about it nor could there be, for change is perennial and so will not stop this year or next. The process, which the Report initiates, should be regarded as a continuing one if the intention of the Report is to be realised. The two basic problems of making the most effective choices and using means to greatest advantage will always remain. With them will remain the need for adequate information if policy is to be as fully informed as possible.

CONCLUSION

The members of the Survey Team desire to express their appreciation of the work of the Secretary, Mr. Cathal Mac Gabhann. His extensive knowledge of the subject, his indefatigable industry and his organising ability made contributions to our work far beyond what the duties of a secretary might normally involve. His constructive suggestions often proved decisive in enabling us to resolve points of difficulty. He carried out on our behalf a number of valuable researches into data which we would not otherwise have been in a position to analyse and he displayed much skill in recognising the significance of such data. His cheerfulness and unflagging enthusiasm were an inspiration. We also desire to thank the secretarial staff

who, capably organised by Mr. Mac Gabhann, were at all times obliging and co-operative in the face of unfamiliar material, often onerous duties and, frequently extended hours of work.

Signed

Patrick Lynch (*Director*)

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November, 1965.

C. V. Mac Gabhann
Secretary

NOTES TO CHAPTER TWELVE

Note 1

(1) The numbers and costs of scholarships for the 'manpower' strategy (paragraph 12.20) were estimated as follows:

(a) To obtain 5,000 certificants it was assumed that 6,000 would need to complete the course on the basis of a 1/6th failure rate at certificate examinations (the average of existing failure rates at intermediate and group certificates examination is higher than this—*circa* 25 per cent).

(b) It is assumed that half of this total would come from additional entrants to post-primary schools, and half from reduced rates of 'drop-out'. This reduced 'drop-out' would lower the attrition rate over the period of junior cycle by 25 per cent, that is from about 33⅓ per cent of entrants to about 25 per cent of entrants. Hence to obtain 2,500 certificants from additional entrants would require 3,000 'completers' and 4,000 entrants to first year.

The total number of 'completers' being 6,000, it may be assumed that the total additional number completing second year courses would be 5,400, and completing first year 4,700, on the assumption that the incidence of 'drop-out' remains more or less constant throughout the three-year period. The total number of extra pupils for whom resources would be needed is thus 16,100 (6,000 + 5,400 + 4,700).

(c) The number of scholarships thus needed is obtained as follows: at the present time (1964/65) about 40,000 pupils enter post-primary schools in any year; a maximum of 10 per cent (4,000) may be expected to have scholarships of one sort or another (this is a generous estimate) leaving 36,000 non-scholarship entrants. Of this 36,000, 33⅓ per cent (or 12,000) would drop-out. The number of additional entrants is to be 4,000 and they can be drawn from the remainder of the cohort not yet at post-primary school which may be taken as 16,000. Assuming that all groups compete and are successful on a proportionate basis, this would mean that of every 52 scholarships, 16 would be obtained by new entrants, 12 by potential 'drop-outs' and 24 by pupils who would remain on at school in any event. It might also be expected that some of this latter group might not be eligible for scholarships anyway because their family income would exceed the prescribed limits—in the absence of any data it will be assumed that 25 per cent are so disqualified. Hence we may assume that of every 46 scholarships, 16 would be new entrants, 12 'drop-outs', and 18 from the remaining category. Thus the first group would obtain roughly 35 per cent of the total. Since the number of new entrants is to be 4,000 this gives the total number of annual scholarships as 11,400. On the basis of a three year course this gives a total of 34,000 scholarships.

(d) The average value of the scholarship is taken at £25, which corresponds to existing awards. It may be assumed that aproximately £10 would be for fees, £10 for transport and £5 for books. The fee figure may be too high in the majority of cases, since the bulk of scholarships would no doubt be tenable at vocational and comprehensive schools. There would be some fraction of secondary schools among them, which would tend to raise the average, as would any boarding awards. The remaining components are not generous, so that the overall figure is conservative.

NOTE 2

The additional resources which the above scholarship scheme would require may be estimated as follows:

(a) The total number of additional pupils as estimated above may be taken at 16,000.

(b) At least some part of the additional teaching resources would be met from existing staff—in other words through an increase in the pupil/teacher ratio. It will be assumed that half of the pupil increase will be met in this way and half will be met by introducing additional teachers. (It may be noted that this assumes a worsening of pupil/teacher ratios of about 7 per cent—the total stock of junior pupils being about 120,000 and the extra numbers 8,000).

(c) Allowing for this increase, the pupil/teacher ratio may be taken at say 20 : 1. Accordingly an additional 400 teachers would be needed to cater for 8,000 extra pupils (half of the total increase).

(d) The costs of those teachers may be taken to average £1,000 each per annum or an annual total of £400,000. Other current costs, were they to increase proportionately, might be expected to take another £150,000. However, it might be expected that administrative and other costs not directly linked to actual pupil numbers would not rise in proportion. A conservative estimate would be a rise of £50,000 for these non-teaching costs, to give a total of £450,000 for current costs.

(e) Extra capital expenditure would be involved also. Again assuming that half of the pupils can be catered for with existing capacity, this would necessitate the provision of 8,000 pupil places. These, at an average of £250 per place, would cost £2 million.

NOTE 3

The additional costs incurred by transferring pupils from national schools to post-primary schools (par. 12.30) may be estimated on the basis of existing differences in pupil costs as between these types of school.

(a) The data of chapter 5 give current expenditure per national school pupil at £25 annually. Chapter 10 (Table 32) gives the cost for a continuation pupil at £71, while the cost for a secondary school pupil is given as £43 in chapter 5 (Table 6). Thus the weighted average cost per pupil in post-primary education would be around £50. It might be expected that almost all of the additional pupils would be catered for in vocational (or comprehensive) schools, hence this is the figure whichis the more relevant. The projections of chapter 5 also suggest that the gap in pupil costs will tend to widen in absolute terms over the coming years, hence a difference of £40 per pupil may not be unreasonable.

(b) The number of pupils involved (16,000) is based on the data of chapter 9, that something of the order of 8,000 pupils would be qualified to enter post-primary schools. Assuming these to remain for an average of two years, the total number involved would be 16,000. This gives a total cost of £640,000 for a two year course.

(c) Capital expenditure (as per note 2) on the assumption that 8,000 pupil places are needed would cost £2 million.

NOTE 4

Participation (paragraph 12.54).

(a) The figures of 5 and 20 per cent of a cohort as those who would require maximum grants and some grants respectively, are based in part on the data given in chapter 6 on the social group composition of the population. Thus Tables 27 to 29 of that chapter show group F (Unskilled, Semi-skilled and Others) as accounting for 25 per cent of the total. Table 25 of the Appendix to chapter 6 (which is the only one to have a representative sample) shows specifically that group G (Unemployed, Orphans) account for 3.7 per cent of the total. It is assumed that this latter group would be the maximum grant cases. The figure of 3.7 per cent, however, looks to be somewhat low. It is known (from Social Assistance data) that orphans average about 1,300 for each age-group up to 15 (or just over 2 per cent of a cohort). Unemployment is known to be between 4 and 5 per cent of the labour force, so that if children are distributed on an equivalent basis, they would account for a similar percentage, making the total for group G 6 to 7 per cent. It has accordingly been decided to adopt a figure of 5 per cent for purposes of illustration. The figure of 20 per cent is intended to refer to the remainder of group F.

(b) *Junior Cycle* costs were then calculated as follows. An age cohort was taken as 60,000; the above groups would, therefore, account for 3,000 and 12,000 respectively. It was assumed that only half of these were eligible for post-primary courses. Based on the data of chapter 10 it was assumed that 95 per cent of the pupils would be day and 5 per cent boarding. The grant for pupils is taken at £25 for the 'maximum' cases (fee £10, transport £10, books etc. £5) and an average of £10 for the other groups. For boarding pupils, the grant is taken as £150 in the maximum cases, and an average of £100 for the others. The cost for one year is thus £134,000 (1,425 × £25, 5,700 × £10, 75 × £150, 300 × £100). On the assumption of a three-year course the cost is taken as £400,000. (There is no allowance made at this level for earnings foregone, since the courses primarily relate to those within the age-limits for compulsory education).

(c) *Senior Cycle*: The projections of chapter 3 suggested that enrolments by 1970 would be equal to 25 per cent of an age cohort. If the same proportion of the group under consideration were to be enrolled this would raise the overall participation rate of approximately 30 per cent, hence it is assumed that 30 per cent of the group would be enrolled. It is assumed that at this level the grants would need to include an allowance for earnings foregone, hence the grants may be taken as being of the order of £100 for maximum grant day pupils, and averaging £50 for the remainder of day pupils, £250 for the maximum grant boarders and £200 on average for other boarders. The cost for each year of the course is thus £307,500 (850 × £100, 3,400 × £50, 50 × £250, 200 × £200). On the basis of a two year course the cost may be taken as £600,000.

(d) *University*: The total number of students is taken as 19,000 by 1970. Hence the maximum grant pupils should number

1,000 (5 per cent) and other grant pupils 4,000 (20 per cent) for a comparable participation rate. In this case it is assumed that half of these students would be 'boarders' and half would be living at home. The figures for these students are taken as £250 for maximum grant cases and an average of £150 for others. For boarding students the grants are taken as £350 for maximum cases and an average of £250 for others. The total expenditure on grants would thus be £1.1 million annually (500 × £250, 2,000 × £150, 500 × £350 and 2,000 × £250).

NOTE 5

Participation: Additional Resources.

The extra resources needed for such an increased participation scheme may now be estimated. The assumption in each case is that half of the current resources are met from existing capacity.

(a) *Junior Cycle :* As per Note 2 (c) above. Current £450,000, Capital £2 million annually.

(b) *Senior Cycle :* The number of pupils for whom extra resources are needed is taken as 4,000. Hence the current costs are taken at £225,000. It is estimated that capital expenditure

SUMMARY OF THE ESTIMATED ADDITIONAL EXPENDITURE ARISING FROM THE SUGGESTIONS IN CHAPTER TWELVE.

NOTE: The costs shown in this summary are not additive.

Estimated Additional Expenditure (£'000)

	Current	Capital
'Manpower' strategy:		
Scholarships	850	
Other current	450	
Capital items		2,000
TOTAL	1,300	2,000
Transfer of Pupils from Primary to Post-Primary Schools	640	2,000
Participation Strategy:		
Grants to post-primary pupils	1,000	
Other current	675	
Capital		2,500
Grants to university students	550	
Other university current	150	
University capital		1,000
TOTAL	2,375	3,500

would be in respect of 2,000 pupils, to cost £0.5 million.

(c) *University :* Current resources needed for 2,000 pupils. Student/teacher ratio taken at 15 : 1 to give 133 teachers, at an average cost of £1,500 each per annum. Total cost £200,000. Other current costs taken at £100,000. In this case, capital expenditure is assumed to be a necessity for *all* of the additional students (i.e. 4,000) since there is no spare capacity. Pupil place cost is taken at £500; hence the total is £2 million.

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